

STATE OF SOUTH CAROLINA)
)
COUNTY OF GREENVILLE)

PUMP STATION AND FORCE MAIN AGREEMENT

THIS PUMP STATION AND FORCE MAIN AGREEMENT is made and entered into on this 14 day of July, 2004, by and among ALLISON'S MEADOW COMMUNITY ASSOCIATION, INC., a South Carolina nonprofit corporation (the "Association"); LENNAR COMMUNITIES OF CAROLINA, Inc., a Delaware Corporation ("Lennar"); CONDOR ENVIRONMENTAL O&M, LLC, a South Carolina Limited Liability Company ("Condor"); and METROPOLITAN SEWER SUBDISTRICT ("Metropolitan"), a South Carolina Special Purpose District.

WITNESSETH:

WHEREAS, Lennar is currently developing a residential subdivision, Allison's Meadow, in Greenville County, South Carolina, on the property which is described on Exhibit A, hereto attached and made a part hereof (the "Premise"); and

WHEREAS, Lennar owns the property and the Association will become the governing association for the Allison's Meadow Subdivision; and

WHEREAS, the development plan for the Allison's Meadow Subdivision provides for a total of up to 61 homes which will be served by the Pump Station and Force Main as hereinafter defined; and

WHEREAS, gravity sanitary sewer service will be provided to Allison's Meadow by Metropolitan upon approval by Metropolitan and dedication of the gravity lines to Metropolitan; and

WHEREAS, due to the topography of the land on which Allison's Meadow is being developed, a Pump Station and Force Main will be required to be installed within the subdivision, and under its current policies Metropolitan is unwilling to assume the ownership or maintenance responsibility for the Pump Station and Force Main; and

WHEREAS, Condor has agreed to assume the ownership and maintenance responsibility for the Pump Station and Force Main to be located on the property described in Exhibit B in accordance with the terms and provisions of this Agreement;

NOW, THEREFORE, for and in consideration of the foregoing premises, and of the mutual covenants of the parties herein set forth, the parties hereto hereby agree as follows:

1. COMPLETION AND CONVEYANCE OF PUMP STATION AND FORCE MAIN. Lennar agrees to design and complete the construction of the Pump Station and Force Main in accordance with the plans and specifications for the Pump Station and Force Main prepared by Gray Engineering Consultants, Inc. (the "Engineer") that meet the requirements of Metropolitan Sewer Sub District and to cause the Pump Station and Force Main, and which include a standby electric generator which becomes part of the Pump Station, to be approved to operate by the Department of Health and Environmental Control of the State of South Carolina. Lennar, or if then in existence the Association, agrees that at such time as the actions described in the foregoing sentence shall have been completed, Lennar or the Association shall transfer and convey the Pump Station and Force Main to Condor along with all necessary and appropriate easements. At the time of said transfer and conveyance, Lennar or the Association shall also assign to Condor all warranties which shall have been made to Lennar or the Association, or which shall have been deemed to have been made to the Association, by the Contractor and the Engineer in regard to the Pump Station and Force Main and the plans and specifications for the Pump Station and Force Main.

Condor agrees that, during construction and prior to the transfer and conveyance of the Pump Station and Force Main to it, that it will conduct such inspections of the Pump Station and Force Main as Condor shall deem necessary to satisfy itself as to the condition of the Pump Station and Force Main and Lennar agrees to pay Condor's reasonable fees and costs of such inspections. Lennar additionally agrees to pay Condor's reasonable attorney fees associated with this Agreement, construction of the Pump Station and Force Main, and transfer of the Pump Station and Force Main to Condor.

2. OPERATION OF PUMP STATION AND FORCE MAIN. Condor agrees to accept the transfer and conveyance to it by Lennar or the Association of the Pump Station and Force Main and thereafter to operate, repair, maintain and replace the same in accordance with the terms and provisions of this agreement.

Condor shall operate and maintain the Pump Station and Force Main so that all houses served by the Pump Station and Force Main shall receive continuous adequate sanitary sewer service without interruption. The repair, maintenance and replacement responsibilities of Condor under this Agreement shall include the replacement of all parts of the Pump Station and Force Main which shall become worn out or obsolete and the making of all capital repairs and replacements as shall be necessary in order for Condor to carry out its obligations under this Agreement without interruption.

Condor shall operate and maintain the Pump Station and Force Main so that the same will at all times comply with and fulfill all governmental laws, rules and regulations that shall be applicable to the operation and maintenance of the Pump Station and Force Main. Without limiting the generality of the foregoing, Condor shall operate and maintain the Pump Station and Force Main in accordance with all rules and regulations which shall be promulgated at any time, and from time to time, by Metropolitan for privately owned and maintained sanitary sewer Pump Stations and Force Main which are part of the sewage collection system operated by Metropolitan. In addition, Condor shall comply with all policies and requirements of South Carolina Public Service Commission or other appropriate governmental agencies which may be

applicable to the Pump Station and Force Main costs and expenses which it shall incur in connection with the carrying out of its duties and responsibilities under this Agreement.

3. PAYMENT BY LENNAR AND THE ASSOCIATION. The Association, hereby agrees that in consideration for the performance by Condor of its duties and obligations under this Agreement, Lennar or the Association shall pay to Condor the amount of One Thousand Twenty Dollars (\$1,020.00) (the "Monthly Fee") per month beginning at the initial operation of the Pump Station to serve Phase I of the development. The first Monthly Fee shall be prorated in proportion to the fraction of the month the Pump Station and Force Main are in operation.

Upon complete transfer of ownership and control of the Association from Lennar to the subdivision homeowners, the Association shall establish and deliver to Condor an irrevocable letter of credit from a bank located in Greenville or Spartanburg County, South Carolina in the amount of Twenty Five Thousand Dollars (\$25,000.00) to guarantee the payment by the Association of the Monthly Fee to Condor. The letter of credit is to have a term of twenty-four (24) months. The Association agrees to renew the letter of credit or to maintain a Twenty Five Thousand Dollars (\$25,000.00) cash escrow to guarantee the payment of the Monthly Fee.

The Association shall pay the Monthly Fee to Condor on or before the tenth day of each calendar month by means of a check made payable to Condor and mailed or otherwise delivered to the address herein below provided. In the event that or the Association shall at any time fail to pay to Condor the Monthly Fee within thirty (30) days of the due date, Condor shall have the right to draw the Monthly Fee plus ten percent (10%) of the Monthly Fee as a delinquency charge from Lennar or the Letter of Credit upon presentation of such unpaid invoice and an accompanying notarized statement that payment plus penalty are due. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement.

Upon no less than ninety (90) days prior notice to Lennar or The Association, Condor shall have the right to increase the amount of the Monthly Fee at any time, in order to compensate Condor for any reasonable increase in the cost and expense to Condor of performing its responsibilities under this Agreement, and further provided that the increase in the Monthly Fee shall not be increased by more than ten (10%) percent in any twelve month period. Notwithstanding the foregoing, Condor shall not increase the amount of the Monthly Fee because of any fine or penalty assessed by any regulatory agency to Condor for any act or omission by Condor for repairs or replacements to the Premises, including the Pump Station and Force Main, that are the result of the negligent or intentional acts or omissions of Condor.

4. APPROVAL BY METROPOLITAN. Metropolitan hereby consents to the terms of this Agreement and agrees that at such time as the Pump Station and Force Main shall be transferred and conveyed by Lennar or the Association to Condor, Metropolitan will accept the discharge from the Pump Station and Force Main owned and operated by Condor.

5. RESERVE ACCOUNT BY THE ASSOCIATION. Lennar shall pay to Condor, at the execution of this Agreement, the amount of Eighteen Thousand Dollars (\$18,000.00) as a reserve account for the purposes and uses herein provided, immediately prior to the initial operation of the Pump Station and Force Main. The parties hereto agree that the establishment of

such reserve account is a one-time obligation which may be drawn on by Condor for replacement of the Pump Station or Force Main, or any portion thereof, if damaged by accident, vandalism or other disaster neither caused by Condor nor covered by casualty insurance which shall be carried and maintained by Condor. Further, all or any portion of said reserve account may be used by Condor to pay for the costs and expenses of emergency repairs. At the end of five years or if the Pump Station and Force Main is replaced by gravity sewer, or the ownership and operation of the Pump Station and Force Main is transferred to and assumed by a public entity having jurisdiction and authority, the reserve account shall terminate and all funds remaining therein including any interest shall become the property of Condor.

6. NOTICES. Any notices which may be permitted or required under the terms and provisions of this Agreement shall be in writing and shall be deemed to have been duly given, except as otherwise provided in this Agreement, as of the date and time are received by the parties to whom the notices are sent. Such notices shall be deemed received upon hand delivery or by Federal Express or equivalent courier and evidenced by a notation on the records of that courier that such notices were delivered to the parties at the following addresses or at such other address as a party shall notify the other parties in writing:

- (a) Lennar Communities of Carolina, Inc.
3441 Pelham Road, Suite 100
Greenville, SC 29615
- (b) Condor Environmental O&M, LLC
P.O. Box 10005
Greenville, SC 29603
- (c) Metropolitan Sewer Sub-District
120 Augusta Arbor Way
Greenville, SC 29605
- (d) Allison's Meadow Community Association, Inc.
c/o Lennar Communities of Carolina, Inc.
3441 Pelham Road, Suite 100
Greenville, SC 29615

7. TERM. The term of this Agreement shall commence on the date on which this Agreement shall be executed by all parties hereto and shall continue in full force and effect until such time, if any, as Condor shall have transferred and conveyed the Pump Station and Force Main to a governmental subdivision of the State of South Carolina which shall have all power and authority necessary to operate and maintain the Pump Station and Force Main and shall have agreed with Lennar and the Association to do so.

If for any reason Condor Environmental O&M, LLC, or its assigns, does not fulfill their obligation to maintain the pump station and force main, then the Association will assume the

obligations of Condor as set forth herein and Condor will transfer and convey ownership of the pump station and force main back to the Association at no charge to the Association

In addition to the above, this Agreement may terminate in the following ways:

- (a) This Agreement will terminate if a public entity agrees to assume the operation of the premises;
- (b) If the Pump Station and Force Main is replaced by a gravity sewer line, the Agreement shall terminate effective upon the date that the gravity sewer line is placed into operation;
- (c) Condor may terminate the Agreement upon ninety (90) days prior written notice to the Association, provided that prior to termination Condor has identified for the Association and the Association has approved a successor entity that is properly qualified and licensed to enter into an Agreement substantially similar to this Agreement or into an Agreement reasonable satisfactory to The Association to operate the Pump Station and Force Main. Condor shall at all times be responsible for the continued performance of its duties and obligations under this Agreement until the successor entity has assumed the obligations under this Agreement.
- (d) The Association may terminate the Agreement upon thirty (30) days prior written notice to Condor, if (i) any performance standard included within this Agreement is not met for a cumulative period of fourteen (14) days or more during any rolling twelve (12) month period; or (ii) a sewage back up in any residence, caused by the Pump Station or Force Main, occurs four (4) or more times during any twelve (12) month period; or (iv) a sewage overflow out of the Pump Station or Force Main, occurs four (4) or more times during any rolling twelve (12) month period; or for the convenience of the Association. In the event of any default of Condor of any of these conditions, Condor agrees to promptly deed the Pump Station and Force Main premises back to The Association without consideration.

8. METROPOLITAN APPROVAL. Notwithstanding the foregoing, however, any operation of the Pump Station and Force Main by any person, party or entity other than Condor, as herein provided, shall be subject to the approval of Metropolitan, the South Carolina Department of Health and Environmental Control, and the Association. Upon the approval of said transfer and conveyance to a third party operator by such a governmental authority and the completion of said transfer, Condor shall be automatically released from all further duties or obligations under the terms of this Agreement that arise on or after the date of transfer.

9. APPLICATION OF LAWS. This Agreement is governed by the laws of South Carolina.

10. INSURANCE. For the duration of this Agreement, Condor shall keep in full force and effect a policy or policies of public liability, personal and property damage insurance with respect to Pump Station and Force Main and property described on Exhibit B to this

Agreement, with a combined (primary and excess) single limit of not less than \$1,000,000.00. The insurance shall be with a good and solvent insurance company licensed to do business in South Carolina and shall name Lennar and the Association as a co-insured. Copies of the policies, or certificates of insurance, together with proof of premium payment, shall be delivered upon request.

11. AMENDMENTS. This Agreement and any provision herein contained may be modified or amended only by the express written consent of all of the parties hereto or their successors or assigns.

12. ASSIGNMENT. This Agreement and the obligations of Condor may not be assigned to any other party without the express written consent of the Association.

13. WAIVER OF DEFAULT. No waiver of any default by any party hereto will be implied from the failure by any other party to take action with respect to such default. No express waiver of any default will affect any default or extend any period of time for performance other than as specified in such express waiver. One or more waivers of any default in the performance of any provision of this Agreement will not be deemed a waiver of any subsequent default in the performance of the same provision or any other provision. The consent to or approval of any subsequent similar act or request by any party hereto will not be deemed to waive or render unnecessary the consent to or approval of any subsequent similar act or request. The rights or remedies provided by this Agreement are cumulative and no right or remedy will be exclusive of any other, or of any other right or remedy at law or in equity which any party hereto might otherwise have by virtue of a default under this Agreement. The exercise of any right or remedy by any party hereto will not impair such Party's standing to exercise any other right or remedy.

14. SEVERABILITY. If any provision of this Agreement is, to any extent, declared by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement (or the application of such provision to persons or circumstances other than those in respect to which the determination of invalidity or unenforceability was made) will not be affected thereby and each provision of this Agreement will be valid and enforceable to the fullest extent permitted by law.

15. CAPTIONS. The captions of the sections of this Agreement are for convenience only and are not intended to affect the interpretation or construction of the provisions herein contained.

16. BINDING EFFECT. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors and assigns.

17. ENTIRE AGREEMENT. This Agreement constitutes the sole and only agreement of the parties hereto and supersedes any prior understanding or written or oral agreements between the parties respecting the within subject matter, and may be amended only by a writing signed by the parties hereto.

LENNAR COMMUNITIES OF CAROLINA, INC.

By: [Signature]

Its: DIVISION PRESIDENT

DATED: 7/9/04

By: M

Its: DIVISION PRESIDENT

DATED: 7/9/04

By: Samuel P. Weaver

Its: Resident

DATED: 7/19/04

By: William F. Fisher

Its: GENERAL MANAGER

DATED: 7-14-04

STATE OF ~~NORTH CAROLINA~~ *South Carolina*
COUNTY OF ~~CABARRUS~~ *Greenville*) PROBATE

Personally appeared the undersigned witness and made oath that (s)he saw the within named Lennar Communities of Carolina, Inc., a Delaware Corporation, by its duly authorized officer, sign, seal and as its act and deed, deliver the within written instrument and that (s)he, with the other witness subscribed above witnessed the execution thereof.

SWORN TO and subscribed before me
This 9 day of July, 2004.

Joyce W. Farmer (SEAL)
Notary Public for South Carolina
My Commission expires: 10-26-09

STATE OF ~~NORTH CAROLINA~~ *South Carolina*
COUNTY OF ~~CABARRUS~~ *Greenville*) PROBATE

Personally appeared the undersigned witness and made oath that (s)he saw the within named Allison's Meadow Community Association, Inc., a South Carolina nonprofit corporation, by its duly authorized officer, sign, seal and as its act and deed, deliver the within written instrument and that (s)he, with the other witness subscribed above witnessed the execution thereof.

SWORN TO and subscribed before me
This 9 day of July, 2004.

Joyce W. Farmer (SEAL)
Notary Public for South Carolina
My Commission expires: 10-26-09

PROBATE

David Pitt (SEAL)
Notary Public for South Carolina
My Commission expires: May 26th, 2014

PROBATE

Joseph W. Smith (SEAL)
Notary Public for South Carolina
My Commission expires: 9-14-10

FILE Edit Data Entry Tasks Reports Documents Reports Tools Admin Custom Help Oracle

WTR-Wastewater Construction Permit
Construction-Nonresidential
ROW - Domestic Wastewater - Permitting
36158-SW
Approved

DAVID ROADER
MAY 18, 2004
EFIS
MAY 15, 2012
RAYMOND, LORI J
Converted Owner Name: David Roader
Converted Site Name: ALLISON MEADOWS
GRAY ENGINEERING CONSULTANTS INC
JUN 22, 2005

WWC REQUEST TO OPERATE
WWC PUMP STATION/FORCE MAIN

Completed
ROBERTSON, STEVEN A
Approved
TUMBLE, GUY A
JUN 22, 2005
JUN 22, 2005
JUN 22, 2005
JUN 22, 2005
JUN 22, 2005
JUN 22, 2005

667176
662 LF of 4" force main and a pump station to serve a sub-division.

* PTO issued
copy not found

start

EXEMPT

JUN 30 2005

BOOK 2152 PAGE 1275
GREENVILLE, SC

STATE OF SOUTH CAROLINA

COUNTY OF GREENVILLE

QUITCLAIM DEED
(OF ALL RIGHT, TITLE AND INTEREST)

2005 JUN 30 P 1:20
TIMOTHY L. MANNEY
REGISTER OF DEEDS

TO ALL WHOM THESE PRESENTS MAY COME:

THIS QUITCLAIM DEED (this "Deed") is made this 28th day of June, 2005, by and between LENNAR CAROLINA, INC., a Delaware corporation (f/k/a Lennar Communities of Carolina, Inc.) (the "Grantor"), and CONDOR ENVIRONMENTAL O&M, LLC, a South Carolina limited liability company (the "Grantee").

WITNESSETH

WHEREAS, Allison's Meadow Community Association, Inc., a South Carolina nonprofit corporation, the Grantor, the Grantee, and Metropolitan Sewer Subdistrict, a political subdivision of the State of South Carolina, entered into that certain Pump Station and Force Main Agreement dated July 14, 2004, and recorded in the Office of the Register of Deeds for Greenville County, South Carolina in Book 2134, and Page 1194 (the "Pump Station Agreement"); and

WHEREAS, pursuant and subject to the terms and conditions of the Pump Station Agreement, the Grantor is required to convey the Property (as defined herein) to the Grantee;

WHEREAS, the Grantor desires to reserve an access easement for ingress and egress over and through the Property (as defined herein); and (16) 897-296.1-1-63

WHEREAS, the Grantor desires by this Deed to quitclaim all of its right, title and interest in the Property (as defined herein) as well as any and all improvements now located on the Property, including, without limitation, the pump station and force main.

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS that the Grantor in consideration of the sum of \$5.00 and no other consideration to the Grantor well and truly paid by the Grantee, the receipt and adequacy of which are hereby acknowledged, subject to the terms and conditions of the Pump Station Agreement and subject to the reserved access easement described hereinafter, has remised, released and forever quitclaimed, and by these presents does remise, release and forever quitclaim unto:

CONDOR ENVIRONMENTAL O&M, LLC

All right, title and interest of the Grantor in and to:

58694

06-30-2005 01CL3930

RECORDING FEE 12.00

Attached hereto as Exhibit "A" and made a part hereof (the "Property")

TAX MAP REFERENCE: 296-1-03

DERIVATION: The above described property is a portion of that conveyed to Grantor herein by Title to Real Estate Limited Warranty Deed of Walter E. Panagakos and Patricia D. Panagakos, dated March 25, 2004, and recorded on March 26, 2004, in the Office of the Register of Deeds for Greenville County, South Carolina in Deed Book 2081, Page 165. Tax Map Number: 296-1-03.

THE MAILING ADDRESS OF GRANTEE:

508 Poinsett Highway
Greenville, South Carolina 29609

TOGETHER WITH ALL AND SINGULAR the rights, members, hereditaments and appurtenances to the Property belonging or in anywise incident or appertaining.

TOGETHER WITH all of Grantor's right, title, and interest in, to, and under (i) that certain Right of Way and Sewer Easement recorded on October 22, 2004, in the Office of the Register of Deeds for Greenville County, South Carolina in Book 2113 at Page 1667; and (ii) that certain Right of Way and Sewer Easement recorded April 14, 2005, in the Office of the Register of Deeds for Greenville County, South Carolina in Book 2139 at Page 863.

THIS CONVEYANCE IS FURTHER MADE SUBJECT TO THE FOLLOWING (the "Permitted Exceptions"):

- (i) all conditions, covenants, easements, restrictions, and rights of way indicated by instruments, including plats, of record;
- (ii) all applicable zoning and other land use regulations or restrictions of any political subdivision in which the subject property is situate;
- (iii) the terms and conditions of the Pump Station Agreement; and
- (iv) the access easement for ingress and egress described and reserved herein.

AND FURTHER SUBJECT TO AND RESERVING FROM THE CONVEYANCE HEREUNDER a nonexclusive, perpetual easement for the purpose of providing ingress, egress, and access through, across, and between the Property by the Grantor and its respective successors, assigns, and such agents, customers, invitees, licensees, employees, servants, contractors, mortgagees, invitee's, employees, servants, licensees, contractors and agents as might be designated by the Grantor from time to time; provided that the failure of the Grantee or the parties referenced above to exercise any of the rights herein granted shall not be construed as a waiver or abandonment of the right thereafter at any time and from time to time exercise any or all of same.

SUBJECT TO THE PERMITTED EXCEPTIONS, TO HAVE AND TO HOLD all and singular the Property and interest quitclaimed above unto the said Grantee and the successors and assigns of Grantee, forever, so that neither the said Grantor, nor the successors or assigns of the Grantor nor any other person or persons claiming under the Grantor, or any of them, shall at any time hereafter, by any

way or means, have, claim or demand any right or title to the aforesaid premises or appurtenances or any part or parcel thereof, forever.

THE PROPERTY AND IMPROVEMENTS ARE SOLD IN "AS-IS" CONDITION. THE GRANTOR GIVES NO WARRANTY, EXPRESS OR IMPLIED, TO THE DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, PRODUCTIVENESS OR ANY OTHER MATTER OF THE PROPERTY OR IMPROVEMENTS. THE GRANTOR SHALL IN NO WAY BE RESPONSIBLE FOR THE PROPER USE AND SERVICE OF SUCH.

WITNESS the hand and seal of the Grantor this 28th day of June, 2005.

IN THE PRESENCE OF:

GRANTOR:

LENNAR CAROLINA, INC., a Delaware corporation

J. B. Waldron III
Witnesses Number 1
Karin D. Chambers
Witness Number 2

By: [Signature] (SEAL)
Name: Jenny Olivero
Title: Division President

STATE OF South Carolina)
COUNTY OF Greenville)

ACKNOWLEDGEMENT

I, Karin D. Chambers, a notary public for the State of South Carolina, do hereby certify that Lennar Carolina, Inc., a Delaware corporation, by Jenny Olivero, its DP, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and seal (where an official seal is required by law) official seal this 29th day of June, 2005.

Karin D. Chambers (SEAL)

Signature of Notary Public
My commission expires: 2-03-09

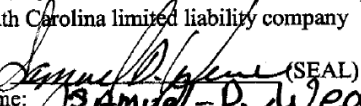
ACCEPTANCE

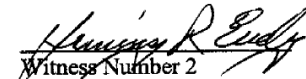
The Grantee accepts this instrument in accordance with the terms hereof this 28 day of June, 2005.

GRANTEE:

CONDOR ENVIRONMENTAL O&M, LLC, a
South Carolina limited liability company


Witness Number 1

By:  (SEAL)
Name: Samuel D. Weaver
Title: President



Witness Number 2

STATE OF SOUTH CAROLINA)
COUNTY OF Greenville)

ACKNOWLEDGEMENT

I, Stephanie Pickelsimer, a notary public for the State of South Carolina, do hereby
certify that Condor Environmental O&M, LLC, a South Carolina limited liability company, by
Samuel Weaver, its President, personally appeared before me this day
and acknowledged the due execution of the foregoing instrument.

Witness my hand and seal (where an official seal is required by law) official seal this 30th day of
June, 2005.

 (SEAL)

Signature of Notary Public
My commission expires: May 26th, 2014

EXHIBIT "A"

ALL that certain piece, parcel or tract of land with improvements thereon, lying and being in Greenville County, State of South Carolina, being designated as that certain area entitled "Pump Station, 10,567 sq. ft., 0.24 acres" as more particularly shown on a plat entitled "Final Plat Allison's Meadow," prepared by Precision Land Surveying, Inc., dated January 27, 2005, recorded in the Office of the Register of Deeds for Greenville County, South Carolina in Plat Book 49L, at Pages 91 and 92 (the "Final Plat"), and also being more particularly shown and described on an As-Built drawing of said lines prepared by Precision Land Surveying, Inc., dated January 25, 2005, on file with Metropolitan Sewer Subdistrict and the Grantee, which are by reference made a part of this description. The above described area is also indicated in the portion of the Final Plat attached hereto as Exhibit "B" and incorporated herein by reference.

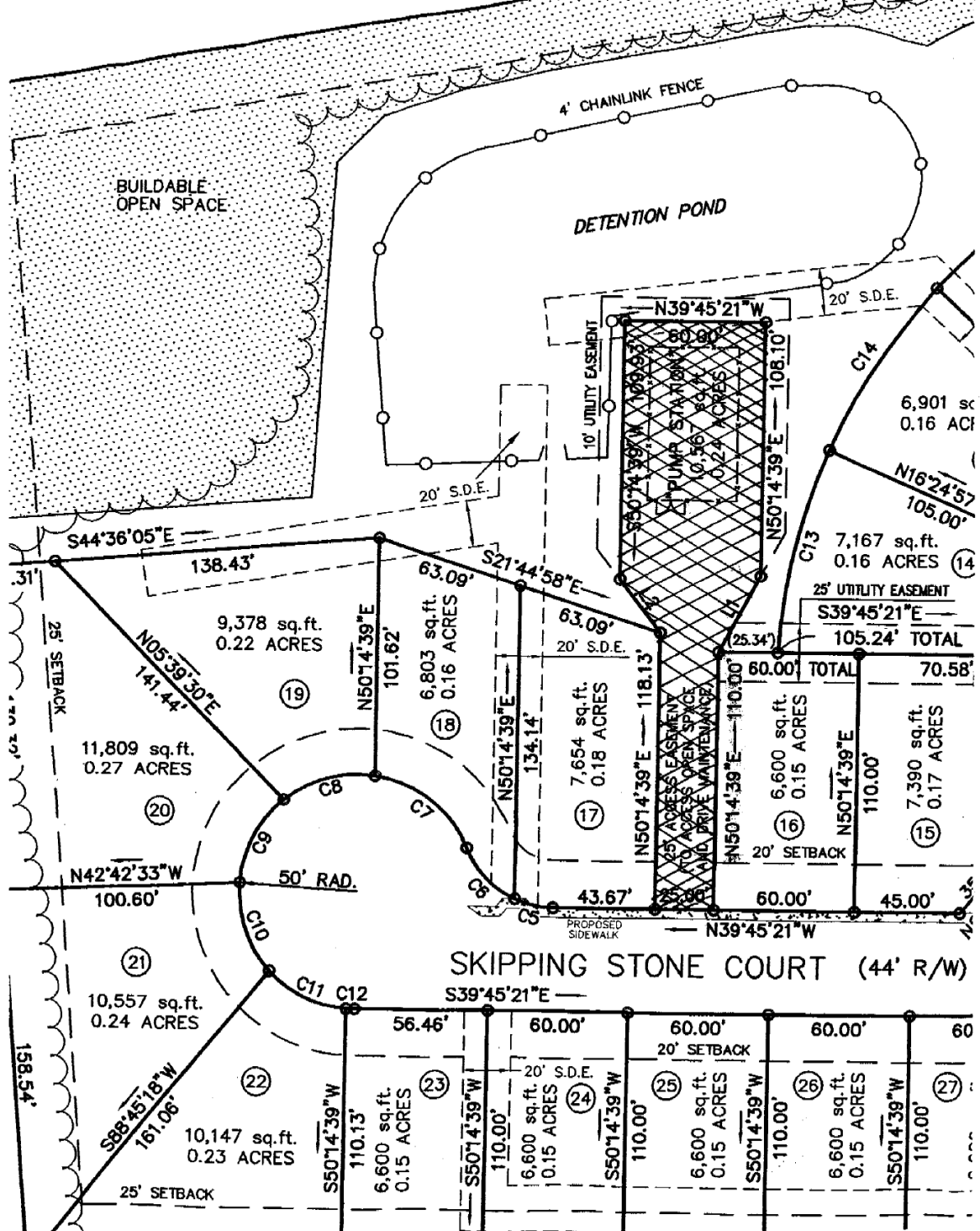
The above described property is all or a portion of that conveyed to Grantor herein by Title to Real Estate Limited Warranty Deed of Walter E. Panagakos and Patricia D. Panagakos, dated March 25, 2004, and recorded on March 26, 2004, in the Office of the Register of Deeds for Greenville County, South Carolina in Deed Book 2081, Page 165.

Tax Map Number: 296-1-03.

BOOK **2152** PAGE **1280**

EXHIBIT "B"

[Attached]



STATE OF SOUTH CAROLINA
COUNTY OF GREENVILLE

AFFIDAVIT

PERSONALLY appeared before me the undersigned, who being duly sworn, deposes and says:

1. I have read the information on this affidavit and I understand such information.
2. The Quitclaim Deed impacts land located in Greenville County, South Carolina bearing Tax Map Number 296-1-03, and being described in as that certain area entitled "Pump Station 10,567 sq. ft. 0.24 acres" on that certain plat entitled "Final Plat Allison's Meadow" recorded in Plat Book 49L at Pages 91 and 92; was conveyed by Lennar Carolina, Inc. to Condor Environmental O&M, LLC on June _____, 2005.
3. Check one of the following: The conveyance is
 - (a) _____ subject to the deed recording fee as a transfer for consideration paid or to be paid in money or money's worth.
 - (b) _____ subject to the deed recording fee as a transfer between a corporation, a partnership, or other entity and a stockholder, partner, or owner of the entity, or is a transfer to a trust or as a distribution to a trust beneficiary.
 - (c) X exempt from the deed recording fee because (See Information section of affidavit):
Exemption Number 1
(If exempt, please skip items 4 - 7, and go to item 8 of this affidavit.)
4. Check one of the following if either item 3(a) or item 3(b) above has been checked (See Information section of this affidavit):
 - (a) _____ The fee is computed on the consideration paid or to be paid in money or money's worth in the amount of _____.
 - (b) _____ The fee is computed on the fair market value of the realty which is _____.
 - (c) _____ The fee is computed on the fair market value of the realty as established for property tax purposes which is _____.
5. Check Yes _____ or No _____ to the following: A lien or encumbrance on the land, tenement, or realty before the transfer and remained on the land, tenement, or realty after the transfer. If "Yes," the amount of the outstanding balance of this lien or encumbrance is: _____.
6. The deed recording fee is computed as follows:
 - (a) Place the amount listed in item 4 above here: _____
 - (b) Place the amount listed in item 5 above here: _____
(If no amount is listed, place zero here.)
 - (c) Subtract Line 6(b) from Line 6(a) and place result here: _____
7. The deed recording fee due is based on the amount listed on Line 6(c) above and the deed recording fee due is: _____.
8. As required by Code Section 12-24-70, I state that I am a responsible person who was connected with the transaction as:
Grantor _____.
9. I understand that a person required to furnish this affidavit who willfully furnishes a false or fraudulent affidavit is guilty of a misdemeanor and, upon conviction, must be fined not more than one thousand dollars or imprisoned not more than one year, or both.

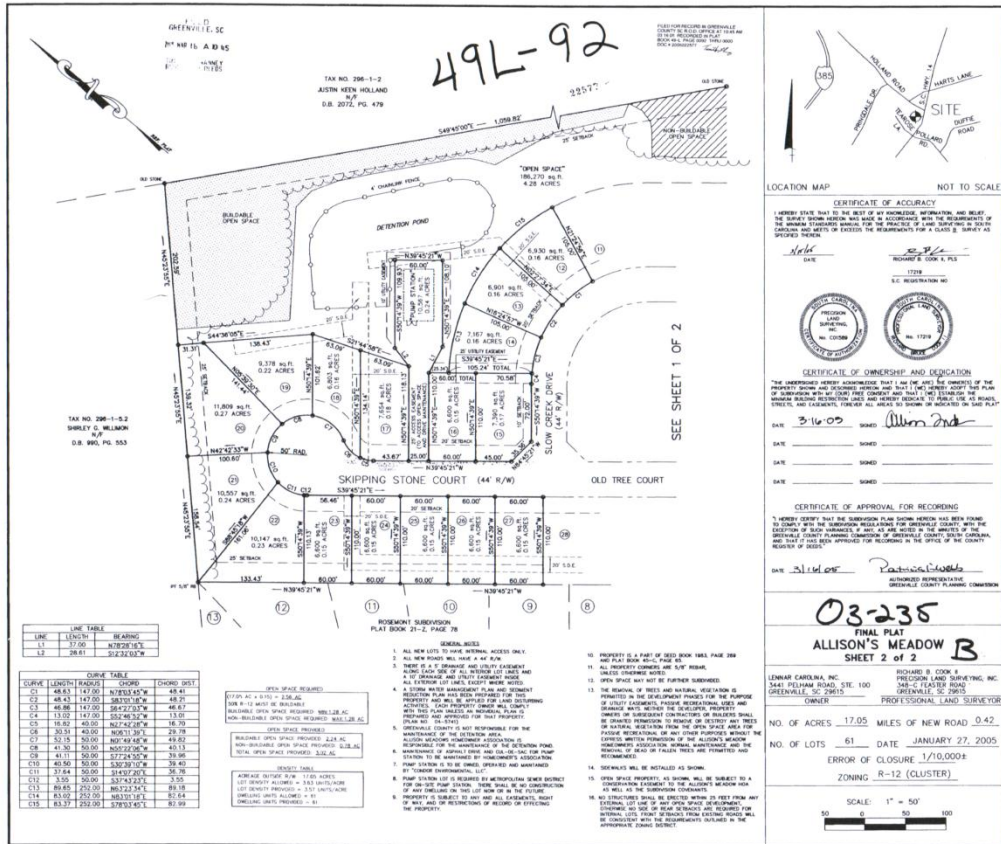
Lennar Carolina, Inc.

By: [Signature]
Name: Jenny Olivaro
Title: Division President

SWORN to before me this 29
day of June, 2009
[Signature]
Notary Public for South Carolina
My Commission Expires: 2-03-09

FILED FOR RECORD IN GREENVILLE
COUNTY SC R.O.D. OFFICE AT 01:20 PM
06 30 05 RECORDED IN DEED
BOOK 2152 PAGE 1275 THRU 1282
DOC # 2005058694
[Signature]





THE PROJECT MANUAL
SPECIFICATIONS FOR

ALLISON MEADOWS
SIMPSONVILLE, SC

SITework FOR SUBDIVISION
HIGHWAY 14 AND HOLLAND ROAD

OWNER:

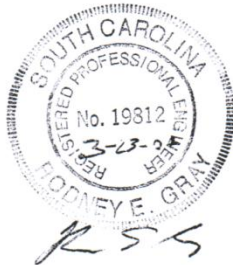
LENNAR COMMUNITIES OF CAROLINA, INC.
3441 PELHAM ROAD, SUITE 100
GREENVILLE, SC 29615
PHONE: 864.322.2280
FAX: 864.322.2287

OWNER'S REPRESENTATIVE

MR. DAVID ROADEN
EMAIL: david.roaden@lennar.com

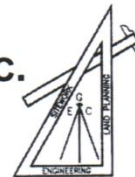
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SECTION 02735 – WASTEWATER PRESSURE MAIN

1. GENERAL

- 1.1 RELATED DOCUMENTS: THE PROVISIONS OF DIVISION 1 SHALL GOVERN THIS SECTION.
- 1.2 DESCRIPTION OF WORK:
 - A. THIS SECTION INCLUDES FURNISHING ALL LABOR, MATERIAL, EQUIPMENT AND PERFORMING ALL OPERATIONS REQUIRED FOR THE INSTALLATION OF UNDERGROUND WASTEWATER PRESSURE MAIN, INCLUDING VALVES, AND ALL APPURTENANCES AS SHOWN ON DRAWINGS AND HEREIN SPECIFIED.
 - B. THE LAYOUT OF LINES AND INVERT ELEVATIONS AT GOVERNING POINTS ARE SHOWN ON DRAWINGS.
 - C. THE SYSTEM SHALL BE INSTALLED AND TESTED TO 100 PSIG.
- 1.3 QUALITY ASSURANCE:
 - A. IN ADDITION TO THE REQUIREMENTS OF THESE SPECIFICATIONS, ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF CURRENT REGULATIONS OF THE GOVERNING AUTHORITY.
 - B. SEWER FORCE MAINS IN RELATION TO WATER LINES MUST CONFORM TO "TEN STATE STANDARDS" SECTION 29.3, AT A MINIMUM.
 - C. WHERE SPECIAL CONDITIONS EXIST, THESE WILL BE REVIEWED IN THE FIELD WITH THE OWNER'S REPRESENTATIVE FOR DETERMINATION OF A PROPER SOLUTION.
 - D. THE CONTRACTOR INSTALLING THE UNDERGROUND PRESSURE MAIN SHALL BE A FIRM SPECIALIZING AND EXPERIENCED IN THIS WORK FOR NOT LESS THAN TWO YEARS.
- 1.4 RELATED WORK SPECIFIED ELSEWHERE:
 - A. UNDERGROUND SANITARY SEWERS - 02730
 - B. UNDERGROUND SANITARY SEWERS AND DRAINAGE LINES - 02732
 - C. LIFT STATION - 02780

D. EARTHWORK AND SITE GRADING - 02200

E. EXTERIOR WATER PIPING - 02660

2. PRODUCTS

2.1 PRESSURE PIPE

- A. GENERAL: PIPE FOR FORCE MAINS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS OF MATERIAL SHOWN ON THE PLANS AND INDICATED ON THE PROPOSAL.
- B. ALL DUCTILE IRON PIPE FURNISHED SHALL BE DESIGNED, MANUFACTURED AND TESTED ON ACCORDANCE WITH THE ANSI SPECIFICATION A 21.50, A 21.51, WITH RUBBER GASKETS COMPLYING WITH ANSI 21.11. ALL DUCTILE IRON FORCE MAIN SHALL CONFORM TO ASTM A-377, LATEST REVISIONS. THICKNESS OF DUCTILE IRON PIPE SHALL COMPLY WITH AWWA CLASS "50" UNLESS OTHERWISE NOTED ON PLANS. "PUSH-ON" OR MECHANICAL JOINTS, WITH GASKETS, WILL BE ACCEPTABLE TYPE JOINTING, UNLESS INDICATED TO BE OTHERWISE ON THE DRAWINGS.
- C. ALL PVC PIPE SHALL BE RATED AT 200 PSI AT 73F, MANUFACTURED FROM TYPE 1, GRADE 1, PVC CONFORMING TO ASTM SPECIFICATION D-2241, LATEST REVISION FOR STANDARD DIMENSION RATIOS (SDR-21).
- D. ALL CARBON STEEL PIPE SHALL BE WELDED STEEL SCHEDULE 40 OR SCHEDULE 80 AS NOTED ON THE DRAWINGS. PIPE SHALL COMPLY WITH ANSI B36.10 AND ANSI B36.19. ALL PIPE SHALL BE COATED AND WRAPPED IN ACCORDANCE WITH AWWA C203-66. APPLICATION OF PRIMER ENAMEL AND WRAPPED IN ACCORDANCE WITH AWWA C203-62.
- E. FITTINGS FOR ALL PIPE SHALL BE OF AT LEAST SAME PRESSURE CLASS AND MATERIAL AS PIPE JOINED TOGETHER. FITTINGS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
 - 1. ALL DUCTILE IRON FITTINGS FURNISHED HEREUNDER SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI SPECIFICATION A21.1. METAL THICKNESS SHALL CONFORM TO AWWA C 110. MECHANICAL JOINTS SHALL COMPLY WITH ANSI SPECIFICATION A 21.11.

- 2. ALL PVC PIPE FITTINGS SHALL BE RATED AT 200 PSI AND SHALL CONFORM TO ASTM D-2467 FOR SOCKET TYPE AND ASTM D-2464 FOR THREADED TYPE FITTINGS.
- 3. ALL CARBON STEEL FITTINGS SHALL BE STANDARD WEIGHT GRADE B SEAMLESS CARBON STEEL, BUTT WELD ENDS, ASTM A 234 RATED AT 150 PSI.
- F. VALVES: IRON-BODY BRONZE - MOUNTED GATE VALVES (2"-12") ORDER SPECIFICATION: DOUBLE-DISC, PARALLEL SEATS, NONRISING STEM (IS), RATED AT MINIMUM 175 PSI WWP, O-RING PACING, STD. 2" SQUARE WRENCH NUT OPERATOR, OPEN COUNTERCLOCKWISE, AND CONFORMING TO AWWA SPEC. C-500-61 IN ALL RESPECTS.

APPROVED VALVES: - SEE PLANS
- G. VALVE BOXES SHALL BE THE SLIDING, HEAVY DUTY, ROADWAY TYPE, SIMILAR AND EQUAL TO CLOW FIGURE F-2520 OR EQUAL.
- H. VALVE WRENCH. ONE SOCKET TYPE STEEL VALVE WRENCH SUITABLE FOR OPERATING 2-INCH SQUARE NOT ON VALVES SHALL BE PROVIDED. WRENCH SHALL BE CLOW F-2520 OR EQUAL.

3. EXECUTION

3.1 GENERAL:

- A. CONTRACTOR MUST EXAMINE THE AREAS AND CONDITIONS UNDER WHICH SANITARY SEWER SYSTEM WORK IS TO BE INSTALLED AND NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. DO NOT PROCEED WITH THE WORK UNTIL NOTIFIED BY THE OWNER'S REPRESENTATIVE.
- B. INSTALL CONDUIT IN ACCORDANCE WITH GOVERNING AUTHORITIES HAVING JURISDICTION, EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE INDICATED.
- C. INSPECT CONDUIT BEFORE INSTALLATION TO DETECT ANY APPARENT DEFECTS. MARK DEFECTIVE MATERIALS WITH WHITE PAINT AND PROMPTLY REMOVE FROM THE SITE.

- D. INSTALL GASKETS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR THE USE OF LUBRICANTS, CEMENTS, AND OTHER SPECIAL INSTALLATION REQUIREMENTS.
- E. PIPE INSTALLATION: INSTALL ALL PIPE IN STRICT ACCORDANCE WITH PIPE MANUFACTURER'S WRITTEN INSTRUCTIONS. PVC FORCE MAIN MUST BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, LATEST REVISION. CAST IRON FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH AWWA-C600, LATEST REVISION.
- F. JOINT ADAPTERS: MAKE JOINTS BETWEEN CAST IRON PIPE AND OTHER TYPES OF PIPE WITH STANDARD MANUFACTURED CAST IRON ADAPTERS AND FITTINGS.

3.2 PIPE TRENCH EXCAVATION

- A. ALL PIPE TRENCH EXCAVATION SHALL BE CLASSIFIED AS EITHER "COMMON EXCAVATION" OR "ROCK EXCAVATION" (SEE SECTION 02730).
- B. THE TRENCH SHALL BE EXCAVATED BY AN APPROVED METHOD, TO A DEPTH TO PERMIT INSTALLATION OF THE PIPE ALONG THE LINES AND GRADE SHOWN ON THE DRAWINGS. THE WIDTH OF THE TRENCH SHALL BE SUFFICIENT TO ALLOW THOROUGH COMPACTING OF THE BACKFILL UNDER AND AROUND THE PIPE, AND IN NO CASE SHALL BE LESS THAN 16 IN. GREATER THAN THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE. WHERE EXCAVATION IS IN ROCK, THE ROCK SHALL BE REMOVED TO A DEPTH BELOW GRADE OF AT LEAST 6 INCHES AND BEFORE LAYING THE PIPE, THE TRENCH SHALL BE REFILLED TO GRAD WITH EARTH, SAND, GRAVEL, OR OTHER SUITABLE MATERIAL, FIRMLY COMPACTED TO PROVIDE PROPER BEDDING FOR THE PIPE.
- C. BELL HOLES SHALL BE EXECUTED ACCURATELY TO SIZE.
- D. THE AMOUNT OF TRENCH EXCAVATED AHEAD OF THE PIPE LAYING SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEERS.
- E. THE CONTRACTOR SHALL DO ALL NECESSARY BRACING AND BRIDGING TO MAINTAIN TRAFFIC DURING CONSTRUCTION.

3.3 BRACING AND SHEETING

- A. WHEREVER NECESSARY TO PREVENT CAVING, EXCAVATIONS SHALL BE ADEQUATELY SHEETED AND BRACED, AND THE TRENCH WIDTH SHALL BE INCREASED ACCORDINGLY. TRENCH SHEETING SHALL REMAIN IN PLACE UNTIL THE PIPE HAS BEEN TESTED AND BACKFILLED TO A DEPTH OF TWO FEET OVER THE TOP OF THE PIPE. THE CONTRACTOR SHALL LEAVE SHEETING AND SHORING IN PLACE WHERE DIRECTED BY THE ENGINEERS OR INSPECTING PUBLIC AUTHORITY.

3.4 PIPE BEDDING

- A. THE BOTTOM OF TRENCHES SHALL BE SHAPED IN UNDISTURBED SOIL, IN MATERIAL PLACED DUE TO THE EXCAVATION OF MUCK, OR IN THE BEDDING REQUIRED ON THE DRAWINGS.
- B. THE ENTIRE BOTTOM OF THE EXCAVATION SHALL BE FIRM, STABLE, AND AT A UNIFORM DENSITY AND UNLESS FOR REMOVAL OF ROCK OR MUCK, LEFT UNDISTURBED. JOINT HOLES SHALL BE EXCAVATED BY HAND TO THE MINIMUM SIZE REQUIRED FOR PROPER INSTALLATION OF THE JOINT SO THE JOINT DOES NOT CARRY THE WEIGHT OF THE PIPE.
- C. PREPARATION OF THE TRENCH BOTTOMS, INCLUDING THE REQUIRED EXCAVATION AND TAMP BACKFILL, SHALL BE PERFORMED ACCORDING TO CLASS A, CLASS B, OR CLASS C BEDDING.
 - 1. CLASS A BEDDING: CLASS A BEDDING SHALL CONSIST OF CONCRETE CRADLES POURED TO THE FULL WIDTH OF THE TRENCH. PIPE SHALL BE LAID TO LINE AND GRADE OF CONCRETE OR WOOD BLOCKING AND JOINTS SHALL BE MADE TO PREVENT MOVEMENT OF THE PIPE WHILE THE CONCRETE IS BEING POURED.
 - 2. CLASS B BEDDING: AN APPROVED, COMPACTED, CRUSHED STONE BEDDING MATERIAL SHALL BE PLACED UNDER AND AROUND THE PIPE AS SHOWN ON THE PLANS. THE BEDDING MATERIAL SHALL EXTEND FOR THE FULL WIDTH OF THE TRENCH.
 - 3. CLASS C BEDDING: CLASS C BEDDING SHALL BE A SHAPED TRENCH BOTTOM WITH BELL HOLES.

3.5 PIPE LAYING

- A. THE ENGINEERS SHALL HAVE ACCESS TO THE AREA TO INSPECT THE PROGRESS OF THE WORK AT ALL TIMES.
- B. PROPER IMPLEMENTS, TOOLS, AND FACILITIES SATISFACTORY TO THE ENGINEERS SHALL BE PROVIDED AND USED BY THE CONTRACTOR FOR THE SAFE AND PROSECUTION OF THE WORK. ALL PIPE, FITTING, AND VALVES SHALL BE CAREFULLY

LOWERED INTO THE TRENCH PIECE BY PIECE BY MEANS OF DERRICK, ROPES, OR OTHER SUITABLE TOOLS OR EQUIPMENT, IN SUCH MANNER AS TO PREVENT DAMAGE TO PIPE OR PIPE COATING. UNDER NO CIRCUMSTANCES SHALL PIPE OR ACCESSORIES BE ALLOWED TO DROP DURING HANDLING, AND THEY SHALL NOT BE DROPPED OR DUMPED INTO THE TRENCH.
- C. ALL FOREIGN MATTER AND DIRT SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH, AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING.
- D. AT TIMES WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF PIPE SHALL BE CLOSED BY APPROVED MEANS, AND NO TRENCH WATER SHALL BE PERMITTED TO ENTER THE PIPE.
- E. CUTTING OF PIPE FOR INSERTING VALVES, FITTINGS, OR OTHER CLOSURE PIECES SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER WITHOUT DAMAGE TO THE PIPE.
- F. NO PIPE SHALL BE LAID IN WATER, OR WHEN THE TRENCH CONDITIONS OR THE WEATHER IS UNSUITABLE FOR SUCH WORK, EXCEPT BY PERMISSION OF THE ENGINEERS.
- G. BEFORE LOWERING AND WHILE SUSPENDED, THE PIPE SHALL BE INSPECTED FOR DEFECTS. CAST IRON PIPE SHALL BE RUNG WITH A LIGHT HAMMER TO DETECT CRACKS. ANY DEFECTIVE, DAMAGED OR UNSOUND PIPE SHALL BE REJECTED.
- H. PIPE SHALL BE LAID WITH BELL ENDS FACING IN THE DIRECTION OF PIPELAYING, UNLESS DIRECTED OTHERWISE BY THE ENGINEERS.

3.6 PUMPING

- A. THE CONTRACTOR SHALL DO ALL PUMPING NECESSARY FOR DE-WATERING TRENCHES AND TO PROVIDE PROPER WORK CONDITIONS FOR INSTALLATION OF PIPE AND APPURTENANCES.

3.7 CONCRETE THRUST BLOCK

- A. AT ALL BENDS, TEES, AND WHEREVER SHOWN, PROVIDE A CONCRETE MASS, OF SIZES REQUIRED, POURED AGAINST FIRM NATURAL EARTH, TO ACT AS THRUST BLOCK AND ANCHOR. THE CONCRETE SHALL BE 3000 LB. CONCRETE FROM A CENTRAL MIXING PLANT APPROVED BY THE ENGINEERS, OR MAY BE JOB-MIXED UNDER CONDITIONS APPROVED BY THE ENGINEERS.

3.8 BACKFILLING

- A. IMMEDIATELY AFTER THE PIPES HAVE BEEN LAID, THE TRENCH SHALL BE BACK-FILLED AROUND THE BARREL OF THE PIPE WITH FINE MATERIAL FREE FROM LARGE STONES, DEPOSITED IN LEVEL LAYERS NOT MORE THAN 6 IN. IN DEPTH, EACH LAYER TO BE THOROUGHLY TAMPED AND COMPACTED BEFORE THE NEXT LAYER IS DEPOSITED.
- B. TRENCHES SHALL BE BACKFILLED, USING FINE MATERIAL UP TO 18 IN. ABOVE TOP OF PIPE, PLACED IN 6 IN. LAYERS AND THOROUGHLY TAMPED. BALANCE OF BACKFILL MAY BE PLACED WITH THE AID OF DUMP TRUCKS, BULLDOZERS, CRANE OR OTHER APPROVED METHODS. WHERE PIPE LINE IS LOCATED UNDER PAVED ROADS OR STREETS, THE BACKFILL SHALL BE COMPACTED IN SUCH A MANNER AS TO PROVIDE AN UNYIELDING FOUNDATION FOR THE PAVING, AND EXCESS MATERIALS SHALL BE REMOVED.
- C. SUCCEEDING LAYERS OF BACKFILL ABOVE THE HEREINBEFORE SPECIFIED 18", MAY CONTAIN COARSER MATERIALS, AND SHALL BE FREE FROM BRUSH OR ANY OTHER PERISHABLE OR OBJECTIONABLE MATTER THAT WOULD PREVENT PROPER CONSOLIDATION OR THAT MIGHT CAUSE SUBSEQUENT SETTLEMENT, AND SHALL BE COMPACTED BY TAMPING. IT IS IMPORTANT THAT PROPER PRECAUTIONS BE TAKEN TO PREVENT FLOATING OF THE PIPE WHEN PUDDLING THE TRENCH, AND THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR NEGLIGENCE OF THESE PRECAUTIONS. THE ENGINEERS WILL DECIDE ON METHODS OF CONSOLIDATING TO BE FOLLOWED ON EACH PART OF THE WORK.

- D. NO ROCK OR BOULDERS SHALL BE USED IN THE BACKFILL FOR AT LEAST ONE FOOT ABOVE THE TOP OF THE PIPE AND NO STONE LARGER THAN 6 INCHES IN ITS GREATEST DIMENSION SHALL BE USED IN THE BACKFILLING.
- E. WHERE IT IS IMPORTANT THAT THE SURFACE OF THE BACKFILL BE MADE SAFE FOR VEHICULAR TRAFFIC AS SOON AS POSSIBLE, OR WHERE A PERMANENT PAVEMENT IS TO BE PLACED WITHIN A SHORT TIME, THE UPPER 12 IN. OF THE BACKFILL SHALL BE OF APPROVED MOIST MATERIAL, THOROUGHLY COMPACTED IN THIN (ABOUT 4 INCH) LAYERS BY TAMPING, AND SHALL BE BROUGHT TO THE REQUIRED SURFACE GRADE.
- F. ANY DEFICIENCY IN THE QUANTITY OF MATERIAL FOR BACKFILLING THE TRENCHES, OR FOR FILLING DEPRESSIONS CAUSED BY SETTLEMENT, SHALL BE SUPPLIED BY THE CONTRACTOR.
- G. THE CONTRACTOR SHALL REPLACE ALL PAVING OF ROADS, SIDEWALKS, OR DRIVEWAYS WHICH ARE DAMAGED BY THE WORK OR THE CONTRACTOR'S OPERATIONS UNDER THIS CONTRACT, TO SATISFACTION OF THE ENGINEERS.

3.9 PIPE JOINTS

- A. PIPE JOINTS SHALL BE MADE UP IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED SPECIFICATIONS.

3.10 PRESSURE AND LEAKAGE TESTS

- A. AFTER PIPE HAS BEEN LAID AND PARTIALLY BACKFILLED, EACH LINE SHALL BE SUBJECTED TO PRESSURE AND LEAKAGE TESTS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AWWA C600, LATEST EDITION.
- B. TEST PRESSURE SHALL BE 100 PSIG, GAUGED AT THE LOW POINT IN THE PIPE SYSTEM.
- C. NO PIPE INSTALLATION SHALL BE ACCEPTED IF LEAKAGE IS GREATER THAN THAT DETERMINED FOR MECHANICAL AND PUSH-ON JOINT PIPE IN AWWA C600, LATEST EDITION, SECTION 13, PARAGRAPH 13.7. TESTS SHALL BE REPEATED UNTIL SATISFACTORY TO THE ENGINEERS.

3.11 CLEAN-UP

- A. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL FROM EXCAVATIONS TO POINTS DESIGNATED BY THE ENGINEERS, AND CLEAN THE SITE OF THE WORK OF ALL DEBRIS COLLECTED DURING CONSTRUCTION.

END OF SECTION

SECTION 02780 - SUBMERSIBLE TYPE SEWAGE PUMP STATION

1. GENERAL

1.1 DESCRIPTION

- A. THE SEWAGE PUMP STATION SHALL BE A SUBMERSIBLE PACKAGE PUMP STATION INCLUDING BUT NOT LIMITED TO: PUMPS, TWO HATCHES AND COVERS FOR PRECAST MANHOLES AS SHOWN ON PLANS, SLIDE RAIL SYSTEM, PIPING, VALVES, CONTROLS, AND CONTROL PANEL. THE STATION SHALL BE DESIGNED TO PERMIT GROUND LEVEL REMOVAL OF PUMPING UNITS FROM WET WELL FOR INSPECTION OR SERVICE WITHOUT DISCONNECTING OR DISTURBING THE DISCHARGE PIPING. THE DESIGN SHALL PERMIT THE PUMPS WHEN LOWERED INTO PLACE TO BE AUTOMATICALLY CONNECTED TO THE DISCHARGE PIPING. THE SYSTEM WILL PREVENT THE NEED FOR PERSONNEL TO ENTER THE WET WELL WHEN PUMP INSPECTION OR SERVICE IS REQUIRED. GUARANTEED PERFORMANCE AT RATED CAPACITY SHALL BE IN ACCORDANCE WITH HYDRAULIC INSTITUTE STANDARDS.

1.2 QUALITY ASSURANCE

- A. ALL EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE HYDRAULICS INSTITUTE, NATIONAL ELECTRICAL CODE, UNDERWRITERS' LABORATORIES, ANSI, AND THE OCCUPATIONAL SAFETY AND HEALTH ACT.
- B. ALL PUMPS AND MOTORS SHALL BE TESTED UNDER ANTICIPATED CONDITIONS, PRIOR TO SHIPMENT. SYSTEM PERFORMANCE AND RESISTANCE TO MOISTURE SHALL BE CERTIFIED IN A WRITTEN TEST REPORT AND SUPPLIED AT THE TIME OF SHIPMENT.
- C. THE PUMPING EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND SUCH THAT ALL COMPONENTS ARE PROPERLY ALIGNED TO PROVIDE SMOOTH OPERATION, FREE FROM DISTORTION AND STRESS.

D. REFERENCE STANDARDS: COMPLY WITH ALL PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS AND STANDARDS, EXCEPT AS OTHERWISE SHOWN OR SPECIFIED.

1. AMERICAN NATIONAL STANDARDS INSTITUTE:
B17-1 KEYS AND KEYSEATS
2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):
 - A27 MILD TO MEDIUM STRENGTH CARBON STEEL CASTINGS FOR GENERAL APPLICATION
 - A36 STRUCTURAL STEEL
 - A48 GRAY IRON CASTINGS
 - A108 COLD-FINISHED CARBON STEEL BARS AND SHAFTING
 - A325 HIGH STRENGTH STEEL BOLTS FOR STRUCTURAL STEEL JOINTS INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS
 - A492 STAINLESS AND HEAT-RESISTING ROPE WIRE
 - A536 DUCTILE IRON CASTINGS
3. ANTI-FRICTION BEARING MANUFACTURER'S ASSOCIATION, LATEST REVISION
4. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION:
 - MGI MOTORS AND GENERATORS
 - ICS INDUSTRIAL CONTROL AND SYSTEMS
5. NATIONAL FIRE PROTECTION ASSOCIATION:
70 NATIONAL ELECTRICAL CODE
6. STEEL STRUCTURES PAINTING COUNCIL:
SP6, NO. 6 COMMERCIAL BLAST CLEANING
PAINT 16, NO. 16 COAL TAR EPOXY-POLYAMIDE
BLACK OR DARK RED PAINT

- E. ALL PUMPS SHALL BE SHOP TESTED WITH THEIR RESPECTIVE MOTORS OR WITH A TEST MOTOR. PERFORMANCE CHARACTERISTICS OF TEST MOTORS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE. CERTIFIED TEST RESULTS AT RATED SPEED SHALL CONTAIN AT LEAST THE FOLLOWING ITEMS: (1) HEAD-CAPACITY CURVE, (2) PUMP EFFICIENCY, (3) BRAKE HORSEPOWER TO SHUT-OFF HEAD, AND (4) OVERALL EFFICIENCY WIRE TO WATER. ALL THIS INFORMATION SHALL BE OBTAINED IN ACCORDANCE WITH THE RECOMMENDED PROCEDURES OF THE HYDRAULIC INSTITUTE. THESE CERTIFIED TEST RESULTS SHALL BE FURNISHED AS SHOP PRINTS TO THE OWNER'S REPRESENTATIVE. IF ON COMPLETION OF THE TESTS, THE RESULTS INDICATE THE SPECIFIED PERFORMANCE IS NOT OBTAINED THE PUMP SHALL BE CONSIDERED AS HAVING FAILED TO FULFILL THE REQUIREMENTS.
- F. AFTER INSTALLATION OF THE PUMPING EQUIPMENT, EACH UNIT SHALL BE GIVEN A RUNNING TEST DURING WHICH IT SHALL DEMONSTRATE ITS ABILITY TO OPERATE WITHOUT VIBRATION OR OVERHEATING AND TO PUMP SATISFACTORILY. ALL DEFECTS OR DEFECTIVE EQUIPMENT REVEALED BY OR NOTED DURING THE TESTS SHALL BE CORRECTED OR REPLACED PROMPTLY AT THE EXPENSE OF THE CONTRACTOR, AND IF NECESSARY, THE TESTS SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.
- G. ALL EQUIPMENT FURNISHED UNDER THIS SECTION SHALL BE THE PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN THE MANUFACTURE OF SAID EQUIPMENT AND OF A DESIGN AND CONSTRUCTION THAT HAS BEEN PROVEN RELIABLE BY A SERVICE PERIOD OF NOT LESS THAN FIVE YEARS. ALL EQUIPMENT SHALL BE ESPECIALLY SUITED FOR CONTINUOUS DUTY ON THE SERVICE INTENDED.

1.3 SUBMITTALS

- A. REQUESTS FOR SUBSTITUTIONS OF PRODUCTS SPECIFIED UNDER THIS SECTION SHALL MADE IN WRITING TO THE OWNER'S REPRESENTATIVE.

- B. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE OWNER'S REPRESENTATIVE COPIES OF ALL SHOP, FABRICATION, EQUIPMENT OR SETTING DRAWINGS, BASIC MATERIAL SPECIFICATIONS AND SCHEDULES REQUIRED FOR THE WORK OF THE VARIOUS TRADES. SHOP (OR WORKING) DRAWINGS SHALL INCLUDE ANY DETAIL DRAWINGS OR DATA REQUIRED FOR PROSECUTION OF THE WORK; BUT WHICH ARE NOT INCLUDED IN THE CONTRACT DRAWINGS. THESE DRAWINGS SHALL HAVE BEEN CHECKED BY THE VENDORS, TRADESMEN, AND THE CONTRACTOR AND SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL BEFORE SUBMISSION TO THE OWNER'S REPRESENTATIVE. WORK, FABRICATION OR MANUFACTURE AFFECTED BY SHOP DRAWING INFORMATION SHALL NOT COMMENCE UNTIL THE DRAWINGS AND DATA HAVE BEEN APPROVED BY THE OWNER'S REPRESENTATIVE. THE OWNER'S REPRESENTATIVES APPROVAL SHALL BE FOR GENERAL ARRANGEMENT AND FITNESS ONLY, AND WILL NOT INCLUDE QUANTITIES, SHOP PRACTICE OR DETAIL DIMENSIONS. THE OWNER'S REPRESENTATIVES APPROVAL OF SUCH DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ERRORS OF ANY SORT IN SHOP DRAWINGS OR SCHEDULES. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AT THE JOB SITE AND FOR INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO TECHNIQUES FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
- C. THE SHOP (OR WORKING) DRAWINGS TO BE SUBMITTED BY THE CONTRACTOR TO THE OWNER'S REPRESENTATIVE FOR APPROVAL SHALL INCLUDE DETAILS COVERING STRUCTURAL MATERIALS, ARRANGEMENT, ANCHOR SYSTEM, AND FOR SUCH OTHER ITEMS AS NECESSARY IN ORDER TO COMPLETE THE CONTRACT AS CALLED FOR IN THE DETAILED SPECIFICATIONS.
- D. CONTRACTOR SHALL SUBMIT THREE (3) OPERATION/MAINTENANCE MANUALS TO THE OWNER'S REPRESENTATIVE.

1.4 PRODUCT STORAGE

- A. AT THE BEGINNING OF THE WORK, THE CONTRACTOR SHALL PROVIDE A WEATHERPROOF STORAGE FOR THE MATERIALS FURNISHED BY THE CONTRACTOR NEEDING PROTECTING. ALL MECHANICAL EQUIPMENT REGARDLESS OF MATERIALS OF CONSTRUCTION OR DESIGN SHALL BE STORED UNTIL INSTALLED. THIS STORAGE MUST BE LOCATED IN AN APPROVED AREA OF THE OWNER'S LAND AT THE PROJECT SITE.

1.5 GUARANTEE

- A. THE EQUIPMENT SHALL BE PROVIDED WITH THE MANUFACTURER'S ONE (1) YEAR WARRANTY. EFFECTIVE BEGINNING DATE OF WARRANTY SHALL BE THE DATE OF ACCEPTANCE OF TOTAL COMPLETED FACILITIES BY THE OWNER.

2 PRODUCTS

2.1 PRODUCTS

- A. SEE PAGES 10 – 20, SECTION 02780.
- B. SEALED FLOAT TYPE MERCURY SWITCHES SHALL BE SUPPLIED TO CONTROL SUMP LEVEL AND ALARM SIGNAL. THE MERCURY TUBE SWITCHES SHALL BE SEALED IN A SOLID POLYURETHANE FLOAT FOR CORROSION AND SHOCK RESISTANCE. THE SUPPORT WIRE SHALL HAVE HEAVY NEOPRENE JACKET AND A WEIGHT SHALL BE ATTACHED TO CORD ABOVE THE FLOAT TO HOLD SWITCH IN PLACE IN SUMP. WEIGHT SHALL BE ABOVE THE FLOAT TO PREVENT SHARP BENDS IN THE CORD WHEN THE FLOAT OPERATES UNDER WATER. THE FLOAT SWITCHES SHALL HANG IN THE SUMP SUPPORTED ONLY BY THE CORD THAT IS HELD TO THE NEMA 4 JUNCTION BOX OR THE WIRING CHANNEL. THREE FLOAT SWITCHES SHALL BE USED TO CONTROL PUMPS. A FOURTH FLOAT SWITCH SHALL BE PROVIDED FOR ALARM CONTROL.

- C. CONTROL PANEL SHALL HAVE A NEMA 4 STAINLESS STEEL ENCLOSURE WITH CAST-IN SEALING CONDUIT. COVER SHALL BE FITTED WITH AN "O" RING FOR 2-INCH CONDUIT. PROPER SEALING COMPOUND SHALL BE SUPPLIED TO SEAL INCOMING POWER AND CONTROL WIRING FROM THE ELECTRICAL CONTROL BOX. CORD GRIP RUBBER GROMMET SEAL FITTING SHALL BE PROVIDED IN BOX TO SEAL PUMP POWER, CONTROL AND LEVEL CONTROL CORDS. CONDUCTOR FROM THESE CORDS TO CONNECT TO CORRESPONDING CORDS FROM MOTOR CONTROL PANEL. INDIVIDUAL CORDS CAN BE REMOVED FROM JUNCTION BOX WHEN REQUIRED TO REMOVE PUMP WITHOUT BREAKING CEMENT SEAL OR DISTURBING OTHER CONNECTIONS. A LOCK HASP SHALL BE PROVIDED ON DOOR. A CIRCUIT BREAKER SHALL BE PROVIDED ON DOOR. A CIRCUIT BREAKER SHALL BE PROVIDED FOR EACH PUMP AND A MAGNETIC STARTER WITH ONE LEG OVERLOAD PROTECTION FOR SINGLE PHASE OPERATION SHALL BE SUPPLIED FOR EACH PUMP. SINGLE PHASE PANELS IN ADDITION TO ABOVE SHALL INCLUDE START AND RUN CAPACITORS FOR EACH PUMP AND A START RELAY FOR EACH PUMP. AN ALTERNATING RELAY SHALL BE PROVIDED TO ALTERNATE PUMPS ON EACH SUCCESSIVE CYCLE OF OPERATION. STARTERS SHALL HAVE AUXILIARY CONTACTS TO OPERATE BOTH PUMPS ON OVERRIDE CONDITION. AN INTERLOCK RELAY SHALL BE PROVIDED TO AUTOMATICALLY RECONNECT THE CONTROL CIRCUIT IN CASE OF CIRCUIT BREAKER TRIP ON ONE PUMP. H-O-A SWITCHES AND RUN LIGHTS SHALL BE SUPPLIED FOR EACH PUMP. TERMINAL STRIP SHALL BE PROVIDED FOR CONNECTING PUMP AND CONTROL WIRES. ADDITIONAL TERMINALS SHALL BE PROVIDED TO CONNECT ALARM. A TRANSFORMER SHALL BE SUPPLIED TO PROVIDE CONTROL POWER.
- D. NOTE: ALL PUMP STATION EQUIPMENT AND APPURTENANCES ARE SPECIFIED ON THE PLANS AND IN ACCORDANCE WITH PAGES 10-20 OF SPECIFICATION SECTION 02780. THE CONTRACTOR IS CAUTIONED TO SUPPLY ALL EQUIPMENT MEETING THE REQUIREMENTS OF METROPOLITAN SEWER SUB-DISTRICT.

2.2 DESIGN

- A. PUMP CAPACITY – SEE ENCLOSED PAGES 10-20 SECTION 02780.
- B. ON SUMP LEVEL RISE, LOWER MERCURY FLOAT SWITCH SHALL FIRST BE ENERGIZED, THEN SECOND FLOAT SWITCH SHALL NEXT ENERGIZE AND START LEAD PUMP. WITH LEAD PUMP OPERATING, SUMP LEVEL SHALL LOWER TO LOW SWITCH TURN-OFF SETTING AND PUMP SHALL STOP. ALTERNATING RELAY SHALL INDEX ON STOPPING OF PUMP SO THAT LAG PUMP WILL START ON NEXT OPERATION. IF SUMP LEVEL CONTINUES TO RISE WHEN LEAD PUMP IS OPERATING A THIRD FLOAT SWITCH SHALL ENERGIZE AND START LAG PUMP. BOTH LEAD AND LAG PUMP SHALL OPERATE TOGETHER UNTIL LOW LEVEL SWITCH TURNS OFF BOTH PUMPS. IF LEVEL CONTINUES TO RISE WHEN BOTH PUMPS ARE OPERATING, FOURTH FLOAT SWITCH SHALL ENERGIZE AND SIGNAL THE ALARM. IF ONE PUMP SHOULD FAIL FOR ANY REASON, THE SECOND PUMP SHALL OPERATE ON THE OVERRIDE CONTROL AND IF LEVEL RISES ABOVE OVERRIDE CONTROL, ALARM SHALL SIGNAL. ALL LEVEL SWITCHES SHALL BE ADJUSTABLE FOR LEVEL SETTING FROM THE SURFACE.
- C. ALARM SIGNAL SUPPLIED IN SAME NEMA 4 ENCLOSURE SHALL BE AN EXTERNAL 100 WATT RED ALARM LIGHT WHICH WILL LIGHT AND AN AUDIBLE HORN OR BELL WILL SOUND. THE EXTERNAL ALARM LIGHT WILL REMAIN LIGHT DURING EXISTENCE OF ANY MALFUNCTION. THE HORN MAY BE SILENCED BY MEANS OF A PUSH TO SILENCE MOMENTARY CONTACT BUTTON (OIL TIGHT) LOCATED ON THE DEAD FRONT.

2.3 MISCELLANEOUS

- A. THE PUMP STATION SITE SHALL BE FENCED AS SHOWN ON THE PLANS. THE STATION SHALL BE PROVIDED WITH ONE SIGN ATTACHED TO THE FENCE GATE AS SHOWN ON THE PLANS.

3. EXECUTION

3.1 INSTALLATION

- A. THE LIFT STATION SITE SHALL BE GRADED AS SHOWN ON THE PLANS WITH THE TOP OF THE STATION SET AT ELEVATION 889.2. THE POWER SUPPLY SHALL BE RUN BY THE POWER COMPANY TO A POINT OF THEIR DETERMINATION, AND THE CONTRACTOR SHALL PROCEED FROM THERE TO THE METER BASE SET ADJACENT TO THE CONTROL BOX AT THE LIFT STATION . THE FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS. UPON COMPLETION OF THE GRADING AND ALL INSTALLATION OF EQUIPMENT AND FENCING, THE SITE SHALL BE SEEDED WITH BERMUDA GRASS, FERTILIZER, AND LIME IN ACCEPTED QUANTITIES WHERE DESIGNATED BY OWNER'S REPRESENTATIVE.
- B. THE CONTRACTOR SHALL PROCURE THE SERVICES OF A FACTORY-TRAINED OWNER'S REPRESENTATIVE OF THE MANUFACTURER OF THE PUMPING EQUIPMENT FOR SUPERVISION DURING INSTALLATION AND ACCEPTANCE TESTS AND FOR INSTRUCTING THE OPERATING PERSONNEL DURING THE INITIAL OPERATION PERIOD. THE REPRESENTATIVE SHALL BE ON THE JOB FOR A MINIMUM OF ONE (1) FULL WORKING DAY.
- C. THE PUMPING EQUIPMENT AND WET WELL SHALL BE SO INSTALLED AND CONSTRUCTED THAT ALL COMPONENTS ARE PROPERLY ALIGNED TO PROVIDE SMOOTH OPERATION, FREE FROM DISTORTION AND STRESS.

3.2 FIELD QUALITY CONTROL

- A. CONTRACTOR TO PROVIDE THE SERVICE OF A FACTORY-TRAINED TECHNICIAN TO MAKE OR SUPERVISE THE FINAL ADJUSTMENTS AND CHECK OUT THE EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- B. AFTER THE EQUIPMENT HAS BEEN CORRECTLY INSTALLED, CHECKED AND ADJUSTED, A PERFORMANCE AND OPERATION TEST SHALL BE MADE TO DEMONSTRATE THAT THE EQUIPMENT MEETS THE INTENT OF THE CONTRACT DOCUMENTS. THIS TEST SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.
- C. PRINTED OPERATING INSTRUCTION FOR USE BY OPERATING PERSONNEL SHALL BE PROVIDED FOR PUMPING EQUIPMENT. THE INSTRUCTIONS SHALL BE ATTACHED TO THE PUMP HOUSING AND SHALL BE PROTECTED AGAINST WEATHERING. THE INSTRUCTION SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: START-UP; PROPER ADJUSTMENT; OPERATION; LUBRICATION; SHUT-DOWN; SAFETY PRECAUTIONS; PROCEDURE IN THE EVENT OF EQUIPMENT FAILURE; AND ANY OTHER NECESSARY ITEMS OF INSTRUCTION AS RECOMMENDED BY THE MANUFACTURER OF THE UNIT.

3.3 ADJUSTMENTS

- A. SET ALL ADJUSTABLE CONTROLS AS DIRECTED BY OWNER'S REPRESENTATIVE.
- B. CORRECT ANY DEFICIENCIES FOUND UNDER PART 3.2 AS DIRECTED.

END OF SECTION

SUBMERSIBLE NON-CLOG PUMP: METRO S.D. FIXED BASE GENERATOR

Allison Meadows

PART ONE—GENERAL

DESCRIPTION

Furnish all labor, materials, tools, equipment, and performance of all work necessary or incidental to furnish and install a precast concrete sewage pump station as shown on the plans and indicated in these specifications.

Major items of equipment shall include two non-clog submersible sewage pumps and a third (spare) pump, lower lift out elbows, upper guide rail assemblies, complete flanged discharge piping, 90 degree elbows inside the wet well, two flanged spring and lever check valves, two flanged lever operated gate valves, complete flanged discharge piping and fittings inside the valve pit, one aluminum wet well equipment access hatch, one aluminum valve pit access hatch, one duplex central control panel, four mercury float switches with mounting bracket, 3" cast iron vent duct, 6' x 8' diameter wet well with monolithically cast invert, 5' valve pit structure, Butyl rubber joint sealing material, and flexible rubber pipe wall penetrations for discharge lines.

QUALITY ASSURANCE

The manufacturer shall demonstrate the ability to fabricate the various pump station structure components as specified, utilizing adequate numbers of skilled workmen, tools, and facilities. To ensure proper quality control and supervision, all factory cast concrete units shall be poured and vibrated, using steel forms, in the same PCI (Pre-stressed Concrete Institute) certified manufacturing facility used for the complete assembly of all pump station components and their equipment.

REFERENCED STANDARDS

- ASTM C890-73 (Latest Revision): Standard practice for minimum structural design loading for monolithic or sectional precast concrete water and wastewater structures.
- ASTM C891-78 (Latest Revision): Standard practice for installation of underground precast concrete utility structures.
- ASTM C913-79 (Latest Revision): Precast concrete water and wastewater structures.

SUBMITTALS

SHOP DRAWINGS AND MANUFACTURER'S LITERATURE: The station manufacturer shall prepare shop drawings for the complete pump station, including structural reinforcing and opening details, equipment mounting, and location details, and manufacturer's catalog cut sheets. Catalog cut sheets shall indicate capacities, dimensions, and materials of construction for all equipment in the station.

OPERATION AND MAINTENANCE MANUALS: The station manufacturer shall prepare a complete operating and maintenance manual for the pump station. The manual shall include routine maintenance requirements and spare parts lists for each major item of equipment in the station. The names and telephone numbers of companies where spare parts and/or trained service technicians are available shall also be included for each item of equipment.

DELIVERY AND HANDLING

The manufacturer shall coordinate with the contractor so that the station is delivered to the job site on the day of, or the day before, the installation. Lifting pins shall be provided by the manufacturer to insure proper handling of the station structures. After delivery to the job site the contractor shall store the control panel off the ground in a dry location until such time as it is mounted and supplied with electrical service. The contractor shall also insure that all pump power and control cables, as well as float cables, are protected from submergence until they are properly installed and sealed.

GUARANTEE

The manufacturer shall guarantee the complete pump station to be free from defects in material and workmanship for a period of one year from the date of start up and acceptance.

PART TWO - PRODUCTS

MATERIALS

WET WELL STRUCTURE: The wet well structure shall consist of one monolithically cast base section with an invert and a 6" long base slab extension for counter flotation. The wet well floor shall have cast in corrosion resistance inserts for pump base mounting. The wet well risers/top sections shall have a minimum wall thickness of 8". Both top slab and bottom slab shall have a minimum thickness of 8". All openings in wet well sections shall be cast in with the exception of the influent pipe opening which shall be cored in the wall.

VALVE PIT STRUCTURE: The valve pit structure shall consist of one 5' deep inside dimension section. Pipe wall penetrations shall be through cast in holes with flexible rubber sealing connectors. The bottom slab of the structure shall have a minimum thickness of 6".

CONCRETE: Cement shall be Type II having a maximum Tricalcium Illuminat (3CaOAL203) content of 8%. Coarse aggregate shall be sound, crushed, angular granitic stone. Smooth or rounded stone is not acceptable. Fine aggregate and coarse aggregate shall meet the requirements of ASTM C33. Calcium chloride or admixtures containing calcium chloride shall not be used in the mix.

REINFORCING: Reinforcing shall meet or exceed the minimum described in ASTM C478.

EQUIPMENT FASTENERS: Pump bases shall be fastened to the concrete wet well by no less than 3/4" stainless steel bolts. The bolts shall be threaded into concrete anchor inserts which have been cast into the invert and shall have a pull out strength of no less than 5,000 lbs. Pump bases shall not be attached with friction fasteners.

JOINT SEALING MATERIAL: Joints between precast sections shall be sealed with one inch diameter Butyl rubber sealant conforming to Federal Specifications SS-S-00210-A and AASHTO-198. The material shall be 100% solids. Asphaltic or petrochemical based materials shall not be used.

FLEXIBLE PIPE CONNECTORS: Watertight connections between the sewer pipe and wet well shall be achieved with flexible pipe connectors conforming to ASTM C923.

SUBMERSIBLE NON-CLOG SEWAGE PUMPS: Pumps shall be Ebara (or pre-approved equal) 80DLMF63.7 non-clog submersible pump. All openings in pipe impeller and volute shall be large enough to pass a 3" diameter sphere. Discharge flange shall be 4" standard. Pumps shall have a capacity of 171.8 GPM at 52.4 TDH and shall use a 5 hp motor operating at 1800 rpm.

CASING AND IMPELLER: All major parts of the pumping unit(s) including casing, motor frame, and discharge elbow shall be manufactured from gray cast iron. Surfaces coming into contact with the pumpage shall be protected with one coat of Zinc chromate primer and all external surfaces shall be protected with one coat of acrylic-alkyd resin enamel that will resist the corrosive effects of sewage. All exposed bolts and nuts shall be stainless steel. All units shall be furnished with a discharge elbow with 125 lb. flat face ANSI flanged. Impellers shall be of the semi-open multi-vane design and shall be equipped with back pump out vanes to prevent entry of foreign material into the seal area. The impeller shall be slip fit to the shaft and shall be key driven. Units 7-1/2" and larger shall have mixed flow design impellers. All units shall be equipped with a replaceable cast iron wear plate.

SHAFT SEAL: Units up to 5 hp shall be furnished with a dual mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber. The seal chamber shall be equipped with a built in device to prevent over filing and an anti-vortexing vane to ensure proper lubrication of both seal faces. Lower seal faces shall be silicon carbide running against silicon carbide. The upper mechanical seal shall be carbon running against a stationary ceramic seal. Mechanical seal hardware shall be all stainless steel. Units 7-1/2 hp and larger shall be equipped with a dual tandem mechanical seal comprised of two separate sets of seal faces. Each pair will be held in contact by a separate spring and shall also be equipped with a third, renewable exclusionary seal between the casing and the back of the impeller to further prevent entrance of foreign materials into the lower seal area. Lower seal faces shall be tungsten carbide running against tungsten carbide. The upper mechanical seal faces shall be ceramic running against a stationary carbon seat. Mechanical seal hardware shall be all stainless steel.

MOTOR: The pump motor(s) shall be of the submersible type, rated 5 HP, 208 volt, 60 Hz, three phase, and full load amps not to exceed 15.0. Motor(s) shall be NEMA MB-1, design Type B equivalent. Motors shall have a 1.15 service factor and be rated at twenty starts per hour. Starter windings shall be heat shrunk into the motor housing. Starter winding is to be open type with insulation good for 180 degrees C maximum temperature.

The motor shaft shall be 403 stainless steel and shall be supported by two heavy duty ball bearings to support the pump shaft taking radial and thrust loads. Ball bearings shall be designed for a minimum B-10 life of 60,000 hours. The pump motor shall be non-overloading and designed for continuous duty for full performance range. A heat sensor thermostat shall be attached and embedded in the winding and connected in series with the motor starter contractor to stop the motor if the temperature rises above 220 degrees F. The thermostat will reset automatically when the motor cools to safe operating temperature. Motors shall not contain any insulating fluid consisting of material classified as hazardous waste by the EPA. Mechanical seal fail protection shall be provided by a mechanical float switch located in a chamber above the seal. This switch shall be comprised of a magnetic float that actuates a dry reed switch encapsulated within the stem. Should there be a mechanical seal failure, the liquid

is directed into the float chamber in which the rising liquid activates the switch opening the normally closed circuit. The float shall be 304 stainless steel.

PUMP MOTOR CABLE: Power and control cables shall be suitable for submersible pump applications and shall be vulcanized for entire length. Cable entry shall be composed of a one piece vulcanized three way mechanical sealing connector with a limited tightening plate and strain relief chain (or gland) in order to provide the most dependable seal performance and to protect cable from usual force meeting U.L. requirements. Cable leads are soldered and then isolated by rubber sealing, thus preventing leakage into the motor even when the cable is cut.

CONTROLS

Controls shall be provided with the pumps and shall be coordinated with the pump manufacturer to meet the requirements herein. The pump control panel shall include a main breaker and emergency breaker with a walking beam interlock, a circuit breaker and starter for each pump circuit, breakers for auxiliary equipment, liquid level control system, and all items required for a complete system to operate on 230 volt, 60 Hz, three phase power. The system shall be complete, requiring only connection of power wiring, motor wiring, and mercury float switches.

CONTROLS OPERATION. Liquid level will be monitored with mercury float switches to control operation of the submersible pumps according to level variation. The system shall automatically alternate starting between the two pumps. The following tasks shall be performed, with all normally operated controls, indicator circuit breaker disconnect handles, reset buttons, and timers located on the face of the panel:

Start and stop the lead pump at the selected wet well level, which can be adjusted by changing the level of the mercury float switches in the wet pit

If liquid level continues to rise after the lead pump starts, the lag pump shall start at the selected level. When the liquid level drops to the "Pumps Off" mercury float switch, both pumps shall stop. (See construction drawings for proper setting of float switches.)

Provide a Hand/Off/Automatic switch for each pump. "Hand" position shall override all controls except high motor temperature shut down. In either the "Hand" or the "Automatic" position, there shall be a 2 to 20 second variable time delay relay that will keep the second pump in a series from starting until the preset time has lapsed.

Two amber indicator lights for each pump shall be provided on the panel to indicate when a pump is locked out due to loss of liquid flow or high motor temperature.

When a pump fails to start or becomes locked out due to high motor temperature, the control system shall automatically rotate to the lag pump when the lead pump start liquid level is reached. These alarm circuits shall signal the auto-dialer system so operations personnel will be notified of the alarm condition.

There shall be a high water level float in the wet well that will activate an audible alarm, alarm light, and automatic telephone dialing system. The automatic dialing system shall also be activated during a power failure. An alarm silence button shall be provided on the panel door to acknowledge alarm and silence the horn.

The mercury float switches shall be set at the elevations shown on the construction drawings. These switches shall be Model 9G Direct Acting float switch by Consolidated Electric or equal, and mounted on a stainless steel cable/weight mounting kit (Model LS) by Consolidated Electric (US Filter/Control Systems).

As described above, control panel shall have circuitry to lock out a pump due to high temperature. Automatic dialing system shall also be activated during a high temperature condition. This alarm condition shall not activate to local audible and visible alarm.

In automatic operation, the controller shall start the lead pump when the "Pump On" mercury switch is activated. If the liquid level drops to the "Pump Off" float the lead pump shall stop. If the water level continues to rise after the lead pump is started, the lag pump shall start when the "Lag Pump" float switch is activated. When the water level drops to the "Pump Off" float switch, both pumps shall stop. When the water level continues to rise after both pumps have started, the high water alarm shall be activated when this level is reached.

CONTROL ALARMS. Alarms shall include devices necessary to signal high water in the wet well, high motor temperature, loss of power and other conditions normally monitored by the equipment supplier. The high water in the wet well alarm shall activate the local audible/visible alarm. The high motor temperature alarms shall be indicated with amber pilot lights on the panel door. Auxiliary alarm circuits for high water in the wet well and high motor temperature shall be wired to the auto dialer. The auto dialer shall also monitor for power failure.

The audible and visual alarm shall include horn with a minimum 100 dB at twenty feet, a flashing red light and a silence button to operate on 120 volt power supplied through the control panel. The silence button shall silence the horn. The light shall continue flashing until the alarm condition is corrected.

CONTROL COMPONENTS. Components of the control panel shall include a main thermal-magnetic air circuit breaker with a mechanical disconnect property sized to serve all equipment and circuitry in the panel.

A motor starter for each pump shall be included in the panel. Each starter shall be NEMA rated full voltage, non-reversing. The starters shall have overload protection and undervoltage release for all three phases. Overload reset buttons shall be located on the outside of the panel to permit reset without opening the panel. Overloads shall have visual trip indication.

Suitable transformers shall be provided in the panel to provide single phase power. The pump level controls shall be 24 volt. All other control wiring shall be 115 volt, single-phase power. A load control center shall be provided in the panel, with a minimum of five branch circuit breakers. These breakers shall supply: panel controls, the autodialer, an all-weather power outlet for hand tools (this power outlet shall be accessible from outside the control panel), a high pressure sodium area light, and one spare.

Elapsed time meters (six digit non-reset type) shall be connected to each motor to record total running time for each pump in hours and tenths of an hour.

CONTROL WIRING DIAGRAMS of the control panel shall be in compliance with standards and specifications of the Joint Industrial Council (JIC), National Machine Tool Builders Association (NMTBA), and National Electric Code (NEC). All wiring shall be color-coded, minimum 16

gauge in the panel. Control wires in the panel shall be bundled and tied with bundles flexible at the hinged side of the enclosure to allow the door(s) to open fully. All wires, connections and terminal strips shall be numbered and identified on the wiring shop drawings and service manuals. Internal components shall be identified by nameplates. Exterior controls, switches, indicators and components shall be permanently identified with engraved plastic nameplates. This panel shall be constructed and labeled as having been constructed in accordance with Underwriters Laboratories standards.

CONTROL ENCLOSURE. Panel enclosure shall be free-standing NEMA 4X stainless steel. Doors of the same material to be secured with continuous stainless steel piano hinge. Control compartments shall be removable from panels on which components are mounted. Back panels shall be secured to enclosure with collar studs. Control units and wiring shall be accessible from the operator side (front) of the panel. No rear or side access required for components access of maintenance.

CONTROL LIGHTNING PROTECTION. Control panel shall be provided with a lightning arrestor with surge protector.

CONTROL MANUFACTURER. Controls manufacturer shall be Consolidated Electric or equal.

CONTROL AUTO-DIALER: The auto-dialer shall be a RACO Verbatim or approved equal. The unit shall be protected with a surge protector. The dialer shall receive power and signals from the pump control panel and shall be connected to the telephone interface box supplied and installed by the telephone company. The autodialer shall separately monitor loss of power, high water in wet well, or high motor temperature.

CONTROL INSTALLATION: The contractor shall install pumps and controls as shown on the plans and as recommended by the equipment manufacturer for a complete operating facility including all wiring and piping.

CONTROL WARRANTY. The pump manufacturer shall warrant the pumps to be supplied to the owner for a period of five (5) years under normal use. The warranty period shall start from the date of initial operation by the equipment representative, as described under "Service" above. The warranty must include 100% coverage of the manufacturer's shop labor and parts, including seals for the first year, and then pro-rated coverage through the fifth year.

STATION PIPE, FITTINGS, AND VALVES: All wet well and valve pit piping and fittings shall be ANSI B16.1 125 lb. standard flanged fitted. Pipe and fittings shall be of cast iron construction and of the sizes indicated on the plans. All flanged gaskets shall be 1/8" thick full face red rubber material. The valve pit shall be furnished with two discharge check valves of the outside spring and lever type and two lever operated discharge gate valves. All valves shall be AWWA standard, with standard 125 lb. flanged ends.

ACCESS HATCHES: The wet well and valve pit access hatches shall be constructed of 3/16" aluminum checker plate with all stainless steel hardware. Hatches shall be designed for a maximum load of 150 psf. Each hatch shall have a drop handle and hasp for padlocking. Hatches shall be held open in the vertical position by means of a positive locking arm, corrosion resistant design.

PUMP GUIDE RAILS: Each pump shall be provided with two 1-1/2" stainless steel pipe guide rails. For wet well depths greater than 18' the guide rails shall be supported intermediately by a support attached to vertical pump discharge lines.

FIXED BASE GENERATOR: A fixed-base generator shall be supplied and located as shown on the Pump Station Site Plan. This generator shall be a Gillette Pro Model 3PD250 commercial grade and the sine wave harmonic distortion shall not exceed 7%. The generator shall be powered by a properly sized 35 engine sized to start and run both pumps. Also included in the generator package shall be a NEMA-rated circuit breaker, battery charger, and a residential rated muffler system. If required, the generator shall have harmonic filters to attain the required distortion limit. The housing shall be standard outdoor weatherproof-rated.

PART THREE - EXECUTION

INSTALLATION

The station shall be installed level and plumb by the contractor on a minimum 6" thick crushed stone bed.

FIELD QUALITY CONTROL

Initial start up shall be performed by a qualified factory representative of the manufacturer. It shall be the responsibility of the representative to supervise the start up and instruct the owner's personnel in the proper operation and maintenance procedures for the entire pump station.

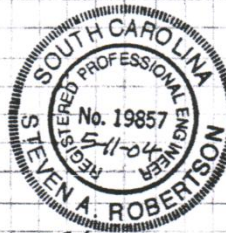
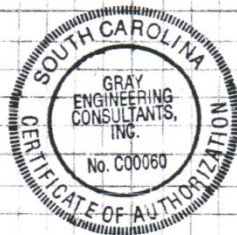


JOB NAME <i>Allison Meadows S/D</i>	JOB NUMBER <i>230196-D</i>	PAGE NO.
JOB DESCRIPTION <i>Pump Station / Force Main Calcs.</i>	BY <i>SAR</i>	DATE <i>5-11-04</i>

$$ADF = 61 \text{ homes} \times 400 \text{ gpd/ea} \times 1/1440 = 16.9 \text{ gpm}$$

$$\text{Peak Flow} = 61 \times 400 \times 2.5/1440 = 42.4 \text{ gpm}$$

The pump chosen will deliver $Q = 129.6 \text{ gpm}$ (see attached pump/system curve) and the attached spreadsheet results show that wet well parameters such as detention time, run time, etc. are within acceptable limits. ACPA Design Data 41 (attached) was used to calculate the buoyancy analysis for the wet well.



Steven A. Robertson

02780-17

WET WELL CALCULATIONS	
Wet Well Diameter - ft	5
Force Main Diameter - in	4
WW Volume per Ft - gal/ft	146.9
Pumped Outflow - gpm	129.6
Velocity in Force Main - fps (> 2.5)	3.3
Top of Wet Well Elevation - ft	889.63
Top of Ground Elevation - ft	889.10
Influent Pipe Invert Elevation - ft	879.97
Influent minus High Water - ft	1.00
High Water Alarm Elevation - ft	878.97
High Water minus Lag On - ft	1.50
Lag Pump On Elevation - ft	877.47
Lag minus Lead - ft	1.50
Lead Pump On Elevation - ft	875.97
Lead minus Pumps Off - ft (> 2.5)	2.50
Pumps Off Elevation - ft	873.47
Pumps Off minus Bottom - ft	1.50
Bottom of Wet Well Elevation - ft	871.97

	Average Daily Flow, GPM	Net Outflow, GPM	Det. Time, Minutes	Run Time, Minutes (> 2)	Pumps Off, Minutes (> 5)	Cycles / Hour, Each Pump (2 - 8)
ADF	16.9	112.7	21.7	3.3	46.7	2.4
10% Increments ↑ ↓	18.6	111.0	19.8	3.3	42.8	2.6
	20.4	109.2	18.0	3.4	39.3	2.8
	22.5	107.1	16.3	3.4	36.1	3.0
	24.7	104.9	14.8	3.5	33.2	3.3
	27.2	102.4	13.5	3.6	30.6	3.5
	29.9	99.7	12.3	3.7	28.2	3.8
	32.9	96.7	11.1	3.8	26.1	4.0
	36.2	93.4	10.1	3.9	24.2	4.3
	39.8	89.8	9.2	4.1	22.5	4.5
PEAK	42.4	87.2	8.7	4.2	21.5	4.7

Emergency Storage Calculations	
ES Manhole (ESMH)	
Diameter, ft	4
Top Elevation, ft	887.98
Bottom Elevation, ft	880.80
Height, ft	7.18
Volume = $(\pi d^2/4) \times H$, ft ³	90.16
Wet Well (WW)	
Diameter, ft	5.00
Top Elevation, ft	888.96
High Water Elevation, ft	878.97
Height, ft	9.99
Volume = $(\pi d^2/4) \times H$, ft ³	196.15
Discharge Pipes Volume, ft ³	1.22
Total Wet Well Volume, ft ³	194.93
ESMH + WW Volume V, ft ³	285.10
Peak Flow to Wet Well, gpm	42.4
Time to Fill, min (V, cf) x 7.48 gal / cf x 1 min / 42.4 gal	50.30

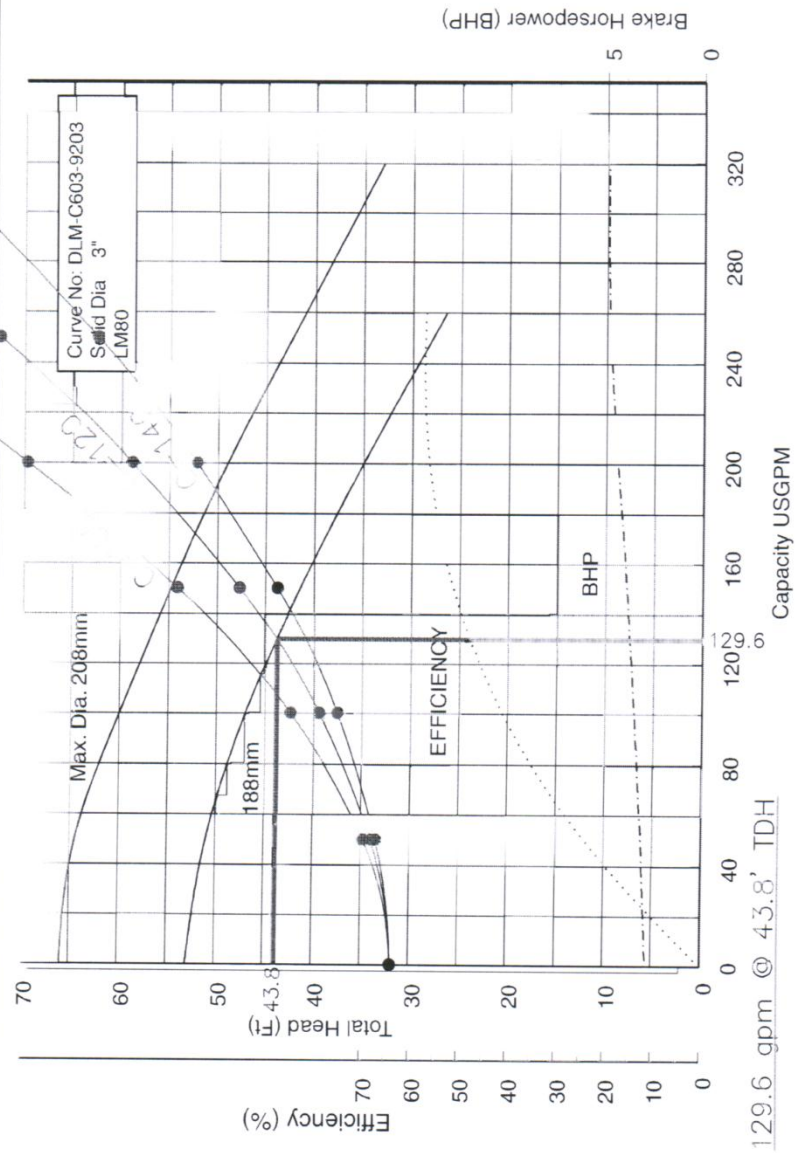
POINTS FOR SYSTEM CURVE					
Hazen Williams Equation for Headloss, H_L due to Friction					
$H_L = (10.44 * L * Q^{1.85}) / (C^{1.85} * D^{4.8655})$		x=Q	y=H	$H_F(DIP)$	$H_F(PVC)$
High Point Elevation, ft	905.40	0	31.9	0	0
Pumps Off Elevation, ft	873.47	50	34.8	2.9	0.0
Static Head, ft	31.9	100	42.4	10.5	0.0
Length DIP, ft	852	150	54.1	22.2	0.0
Diameter DIP, in	4	200	69.7	37.7	0.0
Roughness Coefficient, DIP	100	250	88.9	57.0	0.0
Length PVC, ft	0	300	111.8	79.9	0.0
Diameter PVC, in	4	350	138.2	106.3	0.0
Roughness Coefficient, PVC	100	400	168.0	136.0	0.0
		450	201.1	169.1	0.0
		500	237.5	205.5	0.0
High Point Elevation, ft	905.40	0	31.9	0	0
Pumps Off Elevation, ft	873.47	50	34.0	2.1	0.0
Static Head, ft	31.9	100	39.4	7.5	0.0
Length DIP, ft	852	150	47.7	15.8	0.0
Diameter DIP, in	4	200	58.9	26.9	0.0
Roughness Coefficient, DIP	120	250	72.6	40.7	0.0
Length PVC, ft	0	300	88.9	57.0	0.0
Diameter PVC, in	4	350	107.8	75.8	0.0
Roughness Coefficient, PVC	120	400	129.0	97.1	0.0
		450	152.6	120.7	0.0
		500	178.6	146.7	0.0
High Point Elevation, ft	905.40	0	31.9	0	0
Pumps Off Elevation, ft	873.47	50	33.5	1.6	0.0
Static Head, ft	31.9	100	37.5	5.6	0.0
Length DIP, ft	852	150	43.8	11.9	0.0
Diameter DIP, in	4	200	52.2	20.2	0.0
Roughness Coefficient, DIP	140	250	62.5	30.6	0.0
Length PVC, ft	0	300	74.8	42.9	0.0
Diameter PVC, in	4	350	88.9	57.0	0.0
Roughness Coefficient, PVC	140	400	104.9	73.0	0.0
		450	122.7	90.8	0.0
		500	142.2	110.3	0.0

EBARA Submersible Sewage Pumps

Performance Curves

Project: _____ GPM: _____ TDH: _____ EFF: _____ HP: _____ Chk'd: _____ Date: _____

80DLMF63.7 (5HP) Synchronous Speed: 1800 RPM



Wastewater Construction Permit
Bureau of Water

Permission is hereby granted to: David Roaden
3441 Pelham Rd Ste 100
Greenville, SC 29615

for the construction of a sanitary sewer system in accordance with the construction plans, specifications, engineering report and the Construction Permit Application signed by Steven A. Robertson, Registered Professional Engineer, S.C. Registration Number: 19857.

Project Name: ALLISON MEADOWS SUBDIVISION PS & FM
Location: SC Hwy 14 near Holland Rd

County: Greenville

Project Description: 852 linear feet of 4" force main and a pump station to serve a sub-division.

This project will connect to the WCRSA/GILDER CREEK treatment facility, (NPDES Permit SC0040525) but will not contribute any new flow.

Special Conditions:

None

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.


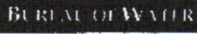
This is a permit for construction only and does not constitute State Department of Health and Environmental Control approval, temporary or otherwise, to place the system in operation. An Approval to Place in Operation is required and can be obtained following the completion of construction by contacting the EQC Appalachia II District Office at (864) 241-1090. Additional permits may be required prior to construction (e.g., stormwater).

Permit Number: 30,196-WW
Date of Issue: August 12, 2004
Expiration Date: Construction must begin prior to August 13, 2006 and be completed prior to August 12, 2007, or this permit will expire.


Jeffrey P. deBessonnet, P.E., Director
Water Facilities Permitting Division

RJR

ww-1248-6

 D H E C DIVISION OF WATER & ENVIRONMENTAL CONTROL	<h2 style="margin: 0;">Construction Permit Application</h2> <h3 style="margin: 0;">Water/Wastewater Facilities</h3>	 BUREAU OF WATER
DRP SUBMITTAL: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> SELECT ONE <input type="checkbox"/> Water Facilities <input checked="" type="checkbox"/> Wastewater Facilities <input type="checkbox"/> Water & Wastewater Facilities		
I. Project Name: <u>Allison Meadows Subdivision</u> County: <u>Greenville</u>		
II. Project Location (street names, etc.): <u>SC Hwy 14 near Holland Rd</u>		
III. Project Description(s): <u>Water System:</u> <u>Wastewater System:</u> <u>Pump station with +/-852 lf of 4" DIP force main</u>		
<div style="border: 2px solid black; padding: 5px; transform: rotate(-5deg); display: inline-block;"> RECEIVED MAY 18 2004 WATER FACILITIES PERMITTING DIVISION </div>		
Project Type (A-Z): Water: _____ Wastewater: <u>C Pump Station and/or Force Main</u>		
IV. Initial Owner: [Time of Application] Name/Organization: <u>David Roaden/Lennar Communities of the Carolinas, Inc.</u> Address: <u>3441 Pelham Rd, Suite 100</u> City: <u>Greenville</u> State: <u>South Carolina</u> Zip: <u>29615</u> Phone: <u>(864) 322-2280</u>		
V. Final Owner: [After Construction] Name/Organization: <u>Condor Environmental O&M, LLC</u> Address: <u>508 Poinsett Hwy</u> City: <u>Greenville</u> State: <u>South Carolina</u> Zip: <u>29609</u> Phone: <u>(864) 242-6644</u>		
VI. Entity Responsible for Final Operation & Maintenance of System: Water System: Name: _____ Address: _____ City: _____ State: <u>South Carolina</u> Zip: _____ Phone: _____ Fax: _____ Wastewater System: Name: <u>Condor Environmental O&M, LLC</u> Address: <u>508 Poinsett Hwy</u> City: <u>Greenville</u> State: <u>South Carolina</u> Zip: <u>29609</u> Phone: <u>(864) 242-6644</u> Fax: <u>(864) 370-1551</u>		
VII. Engineering Firm: Name: <u>Gray Engineering Consultants</u> Address: <u>132 Pilgrim Rd</u> City: <u>Greenville</u> State: <u>South Carolina</u> Zip: <u>29607</u> Phone: <u>(864) 297-3027</u> Fax: <u>(864) 297-5187</u>		
VIII. Is this project? A) Part of a phased project? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If Yes, Phase _____ of _____ B) A revision to a previously permitted project? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If Yes, Permit # _____ Date Approved: _____ (MM/DD/YYYY) Project name (if different): _____ C) Submitted based on a Schedule of Compliance or Order issued by DHEC? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Order # _____ D) Anticipating funding by the State Revolving Fund (SRF)? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> E) Crossing a water body? (e.g., river, creek) No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If Yes, Name of water body _____		
IX. Are Standard Specifications approved by DHEC being used on this project? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If Yes: Water: Date Approved: _____ (MM/DD/YYYY) Approved for whom: _____ Wastewater: Date Approved: _____ (MM/DD/YYYY) Approved for whom: _____		
X. Wastewater Systems: A) Type: Domestic <input checked="" type="checkbox"/> Process (Industrial) <input type="checkbox"/> Combined (Domestic & Process) <input type="checkbox"/> B) Total average design flow of the project not to exceed <u>24,400</u> GPD C) Sewers or Pretreatment 1. Name of facility (e.g., POTW) treating the wastewater: <u>Gilder Creek WWTP</u> 2. NPDES/ND Number of facility in Item #1: <u>SC0040525</u> Treatment Systems 3. Date Preliminary Engineering Report (PER) approved: _____ (MM/DD/YYYY) 4. NPDES/ND application submitted? No <input type="checkbox"/> Yes <input type="checkbox"/> If Yes, Date: _____ (MM/DD/YYYY) Disposal Sites 5. Effluent Disposal Site (Description): _____ 6. Sludge Disposal Site (Description): _____		
XI. Water Systems: Project located within city limits? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Public water system providing water (Name & System ID No.): _____ No.: _____ New water system (including master meter)? No <input type="checkbox"/> Yes <input type="checkbox"/> If Yes, System name: _____		

XII. Type of Submittal: Complete Section A (Standard) or Section B (Delegated Review Program - DRP).

A) Standard Submittal *must* include the following, where applicable:

- ☒ 1. A transmittal letter outlining the submittal package.
- ☒ 2. The original construction permit application, properly completed, with three (3) copies.
- ☒ 3. Three (3) sets of signed and sealed plans and specifications. Specifications may be omitted if approved standard specifications are on file with DHEC.
- ☒ 4. One (1) additional overall plan sheet showing the proposed and existing (only in the area of proposed construction) water and wastewater lines (highlighted for identification) and their sizes.
- ☒ 5. Three (3) sets of the appropriate design calculations. **WASTEWATER:** Design flow (based on R.61-67, Appendix A), pump station calc's. and pump curve. **WATER:** Recent flow test from a location near the tie-on site, design calc's. indicating pressure maintained in the distribution system during max. instantaneous demand, fire flow and flushing velocities achieved. Number/types of service connections, well record form, pumping test results, etc.
- ☒ 6. Three (3) copies of a detailed 8 1/2" x 11" location map, separate from the plans.
- ☐ 7. Three (3) copies of construction easements unless the project owner has the right of eminent domain.
- ☒ 8. A letter(s) from the entity supplying water and/or providing wastewater treatment stating their willingness and ability to serve the project, including pretreatment permits, if applicable. The letter should include the specific flow and, when applicable, the specific number of lots being served.
- ☒ 9. A letter(s) from the entity agreeing to be responsible for the O&M of the water and/or wastewater system.
- ☒ 10. Application fee enclosed \$ 350.00. (Refer to Instructions).
- ☐ 11. **WATER SYSTEMS:** a) A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.
b) For wells, four (4) copies of a wellhead protection area inventory.
c) For new wells, a viability demonstration is required in accordance with Regulation 61-58.1.B.(4).

Note: Other approvals may include 208 and OCRM certification, and navigable waterway permitting.

B) DRP submittal (treatment plants are not covered) *must* include the following, where applicable:

- ☐ 1. A transmittal letter, signed by the professional engineer representing the DRP entity, noting this is a DRP submittal. The letter should state that the project has been reviewed and complies with R.61-58 and/or R.61-67.
- ☐ 2. The original construction permit application, properly completed, with two (2) copies.
- ☐ 3. Two (2) sets of the signed and sealed plans.
- ☐ 4. One (1) additional plan sheet with water and wastewater lines highlighted, as required under Sec. XII.A.4. above.
- ☐ 5. Two (2) sets of the appropriate design calculations. **WASTEWATER:** Same information as required under Section XII.A.5. above. **WATER:** Same information as required under Section XII.A.5. above.
- ☐ 6. Two (2) copies of a detailed 8 1/2" x 11" location map, separate from the plans.
- ☐ 7. Two (2) copies of construction easements, unless the project owner has the right of eminent domain.
- ☐ 8. DHEC's Ocean and Coastal Resource Management certification (for projects in applicable counties).
- ☐ 9. DHEC's Water Quality permit or conditions for placement in navigable waters, and other Agency approvals.
- ☐ 10. **WASTEWATER SYSTEMS:** a) A letter of acceptance from the entity providing the treatment of the wastewater that includes the specific flow and, when applicable, the specific number of lots being accepted.
b) A letter from the organization agreeing to be responsible for the O&M of the sewer system.
c) The 208 Plan certification from the appropriate Council of Governments (designated 208 areas), or from DHEC on the non-designated 208 areas.
- ☐ 11. **WATER SYSTEMS:** A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.
- ☐ 12. Fee of \$75 for water and \$75 for sewer (\$150 if combined).

Note: The DRP entity should ensure that a copy of the final approved plans are returned to the design engineer.

XIII. Construction plans, material and construction specifications, the engineering report including supporting design data and calculations are herewith submitted and made a part of this application. I have placed my signature and seal on the engineering documents submitted, signifying that I accept responsibility for the design of this system, and that I have submitted a complete administrative package.

Engineer's Name (Printed): Steven A. Robertson

Signature: Steven A. Robertson

S.C. Registration Number: 19857

Registered Professional Engineer

XIV. Prior to final approval, I will submit a statement certifying that construction is complete and in accordance with the approved plans and specifications, to the best of my knowledge, information and belief. This certification will be based upon periodic observations of construction and a final inspection for design compliance by me or a representative of this office who is under my supervision.

Engineer's Name (Printed): Steven A. Robertson

Signature: Steven A. Robertson

S.C. Registration Number: 19857

Registered Professional Engineer

XV. I hereby make application for a permit to construct the project as described above. I have read this application and agree to the requirements and conditions and agree to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.

Owner's Name (Printed): David Roaden

Signature: David Roaden

Owner's Title: Land Development Manager

Date: 05/11/2004

(MM/DD/YYYY)

GRAY ENGINEERING CONSULTANTS, INC.

March 29, 2005



SCDHEC
301 University Ridge, Ste. 5800
Greenville, SC 29601
Attn: Mr. Guy Tumblin-
District Engineer

RE: Force Main and Pump Station
Construction Certification-
Allison's Meadow
SCDHEC Permit # 30,196-WW
GEC #230196-Simpsonville, SC

Mr. Tumblin:

I certify that the construction of the Pump Station/Force Main at Allison's Meadow in Simpsonville, SC is now complete and in accordance with the approved plans and specifications, to the best of my knowledge, information and belief. This certification is based upon periodic observations of construction and a final inspection for design compliance by myself, and the agreement of Condor Environmental O&M, LLC to own, operate and maintain the pump station and force main system.

Sincerely,

Steven A. Robertson, PE
Gray Engineering Consultants, Inc.

09/09/2004 18:18 8642975187

GRAY ENGINEERING

PAGE 00286



Administrative Office
561 Mauldin Road • Greenville, SC 29607
864/299-4000 • Fax 864/277-5852

Operations/Laboratory/Pre-treatment
660 Mauldin Road • Greenville, SC 29607
864/299-4040 • Fax 864/299-4059

May 19, 2004

RECEIVED

MAY 21 2004

GRAY ENGINEERING CONSULTANTS

Mr. Jeremy S. Ritchie, P.E.
Gray Engineering Consultants, Inc.
132 Pilgrim Road
Greenville, South Carolina 29607

RE: Allison Meadows Subdivision
Highway 14 and Holland Road in Greenville County, South Carolina

Dear Mr. Ritchie:

Western Carolina Regional Sewer Authority (WCOSA) has sufficient capacity for the 24,400 gallons per day flow of wastewater resulting from 61 single-family homes in the referenced subdivision. This flow will be treated at the Gilder Creek Wastewater Treatment Plant, NPDES Permit No. SC0040525.

WCOSA will not own, maintain/operate the onsite pump station, force main and gravity sewer. It is our understanding that the pump station and force main will be owned and operated by Condor Environmental O&M, LLC, and the gravity sewer will be owned and operated by Metropolitan Sewer Subdistrict.

All sewer connections directly or indirectly served by WCOSA are subject to a "New Account Fee." No tie-ins will be allowed until a connection permit is issued by WCOSA. Please notify WCOSA if there are any changes in total daily flows.

Sincerely,

J. Brian Bishop, P.E.
Engineering Supervisor

cc: SCDHEC - Greenville
SCDHEC - Columbia
Metropolitan Sewer Subdistrict

I:\Hind\acceptance letters\allison meadows subdivision.doc

AUG 10 2004

WATER FACILITIES
PERMITTING DIVISION

Celebrating 75 Years of Environmental Stewardship

COMMISSIONERS:
M. GRAHAM PROFFITT, III, Chairman
CHARLES F. STYLES
JOEL H. BYARS
RANDOLPH L. ESKEW
JIM GREGORIE



MICHAEL F. DICKSON
General Manager

June 16, 2005

DHEC # 30,196-WW

Mr. Rodney Gray
Gray Engineering Consultants, Inc.
132 Pilgrim Road
Greenville, SC 29607

Subject: Allison Meadow Subdivision (**Gravity Sewer Only**)

Dear Mr. Gray

A representative of this office has inspected the sewer lines referred to in subject and has found them to be acceptable with the Metropolitan Sewer Sub-district standards. No flow will be allowed within this system until a "Permit To Operate" has been issued from the S.C. Department of Health and Environmental Control (DHEC).

Neither this letter nor the dedication and acceptance of the system shall be deemed to waive any rights that the Sub-district may have for defects in the line not caused by the Sub-district.

*****Special Conditions ***If the newly installed sanitary sewer system is within proposed or existing streets, Metropolitan will not be responsible for any claims due to manhole height until the final pavement is in place and approved by the appropriate agency. *****

Sincerely,

Metropolitan Sewer Sub-district

Robert Arms
Engineering Coordinator

cc: Greenville County Planning Commission
A. Marvin Quattlebaum, Attorney
SCDHEC/Greenville
Project File